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Education Researchers Respond to The COVID-19 Pandemic

Research Report

Theme 6:

Ameliorating the Impact of Fake News on
High School Learners during COVID-19

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JET EDUCATION
SERVICES

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1 Introduction

The primary purpose of Theme 6 (Fake news impacting school-age children [or targeting school-age children]: impacts on behaviour, risk, anxiety, and how to ameliorate) was to investigate high school learners' awareness of fake or false news during the COVID-19 lockdown period in South Africa. A secondary purpose was to examine the types of fake news that exist and how each of these variously impacts on society. We also look at the skills needed in order to distinguish false news from real news. This document is a work in progress, and we hope that other contributions and further research will be undertaken in this field.

1.1 Background

The first appearance of the Coronavirus was first confirmed in China in the Hubei province by the Wuhan Municipal Health Commission to the World Health Organisation (WHO). After this confirmation by the Chinese government, the WHO set up an incident support team and published the first report of the coronavirus outbreak. This technical scientific publication included what China had reported to the WHO about patients who had contracted the virus; it outlined the risk assessment and offered advice to countries about the deadly virus (WHO, 2020).

In South Africa on 7 January 2020, the Department of Health notified the South African public that the WHO had identified the novel coronavirus as the causative agent behind "Severe Acute Respiratory Syndrome Coronavirus 2" (SARS CoV-2) in a group of people who had undertaken international travel. With the world focusing on Wuhan and the subsequent massive outbreak of the virus in Italy, South Africa began to prepare itself for saving lives from the deadly impact of the virus. The first South African case was confirmed on 5 March 2020.

President Cyril Ramaphosa announced new measures to fight the spread of the novel coronavirus in South Africa on 23 March 2020. This included a 21-day nationwide lockdown with severe, but necessary, restrictions on movement that was promulgated as of midnight on 26 March. The initial 21 days were extended by an additional two weeks until midnight on 30 April 2020. The South African Police Service (SAPS), supported by the South African National Defence Force (SANDF), was tasked with enforcing the lockdown. Borders were closed to decrease the rate of infection from those travelling into South Africa. Furthermore, a 14-day quarantine was also enforced on inbound travellers and returning citizens. Schools were closed and millions of learners were to remain at home to enable the spread of the virus to be contained. The closure of schools meant implied that teaching and learning would cease, and the Department of Basic Education (DBE) turned to online learning supplemented by print, radio and TV programmes to provide schooling for learners at home. This new reality of learning during the Covid-19 lockdown found germination in an already unequal education system. A look at the 2018 General Household Survey (Statistics South Africa, 2019) outlining access to educational resources such as laptops and the number of families that send their children to no-fee paying schools gives rise to worry at the reality of the impact on education. The survey notes that the percentage of learners who attended no-fee schools increased from 21.4% to 67. 2%. Access to the internet is limited to 10.4% of South African



households, most of whom are found in Gauteng, the Western Cape, and schools in the metropolitan areas of other provinces. Access in mostly rural provinces is estimated to be around 1.7%, with most parents relying on their mobile phones to access the internet. This means that many children who attend no-fee schools in poor provinces would struggle to engage in meaningful online learning. They would rely on radio and TV platforms and, for those learners, who have access to the internet, social media such as WhatsApp, and, bear exposure to false information.

1.2 Methodology

This study occurred between 31 March 2020 and 30 April 2020. Initially meant to run only during the South African lockdown, it was prolonged by two weeks in line with the lockdown extension. The team consisted of eight researchers, all with some experience of working in education or with children in schools. Three team meetings were held during the course of this study using Google Hangouts, and this was supplemented by written communication via e-mail and WhatsApp. Following the first meeting, researchers were paired up and assigned individual sections to complete. During this process, individual meetings and written communication occurred between the paired researchers and the lead researcher in addition to the main group communication.

The data collection method entailed quantitative, closed-ended surveys. With the aid of the Google platform, two surveys were developed with input from the team and boot camp support staff from JET. One survey was directed at high school learners and the other survey was directed at parents/care-givers and teachers of high school learners. The surveys gathered data on the platforms and media sources high school learners currently use, their perceived level of awareness of fake news and the reported impact it has on their anxiety levels, risk-taking and other behaviours. From the surveys, 24 responses were received from parents and teachers and 49 responses from learners in high schools.

The surveys were distributed on various social media platforms and circulated to pre-existing contacts within the researchers' networks; thus, snowball sampling and convenience sampling were used. Participants accessed the online form independently. The types of questions used consist of a mixture of categorical survey questions and interval/ratio questions. Given various constraints, the information was collected and analysed despite a relatively low number of responses. Our findings are unpacked in the research findings section to provide a provisional understanding of the awareness of false information by parents, caregivers, teachers and most importantly, high school learners. From the data collected, we make recommendations based on insights gained from our analysis, such as the need to include forms of literacies in the basic education curriculum to foster critical thinking and literacy skills.

1.3 Limitations

There were several limitations to this study. The most pertinent concerns relate to digital access and the digital divide. We are not oblivious to the high levels of inequality dogging the South African education system. Participants who had access and answered the survey were mostly those who already had access to devices and Internet connectivity. Those who may be most impacted by fake news were probably less likely to participate in the study. The limited time to collect data was also a key impediment, particularly for



a study of this nature, which meant that we were unable to triangulate responses to check for patterns that might emerge from the responses.

The dominance of international literature on fake news is another limitation as some of the research findings may not be relevant in the South African education context, which is characterised by extreme inequality with poor quality schooling for most disadvantaged learners, a lack of resources, and low learner outcomes. Since this is a developing area of study and our focus was high school learners, the number of available resources we could refer to was significantly reduced, and so we had to work with what was available.

The small sample size impacted the possibility of making meaningful findings. This means that the results cannot be generalised compared to what a large sample size would have provided for making general and meaningful findings, although they do prompt further study. Additionally, the results should be approached somewhat critically since self-reported behaviour can be unreliable.

1.4 Definition of key terms¹

In our paper certain terms in the false news field require clear definition.

- **Fake news** is false or inaccurate information that is created and circulated, misinforming readers. Fake news can be categorised into two types, namely disinformation and misinformation.
 - Disinformation is false information distributed with the intent to deceive.
 - Misinformation is inaccurate, outdated or incomplete information with no intention of harming or misleading its recipients.
- **A social bot** is an automated social media account that is controlled by a computer algorithm. Social bots automatically produce content and interact with humans on social media.
- **Trolls** are real human users who aim to disrupt online communities and provoke consumers into an emotional response, triggering people's negative emotions.
- **Cyborgs** are either bot-assisted humans or human-assisted bots. Created by human beings, cyborgs can act in an automated fashion with human inputs.
- **To #fact-check** is to verify claims to see if they are accurate.
- **Risky behaviour** is engaging in an activity that has the potential to cause harm to that individual or others.
- **Clickbait** refers to internet headlines that purposefully aim to attract attention and encourage web users to click on them.
- **Digital access** is the ability to participate in online communities through online digital resources and technologies.
- **Digital divide** refers to the divide between those who have digital access and those who do not.
- **Social media** are websites and online communication applications that allow users to view, share and interact with online content.

¹ www.blog.hubspot.com/marketing/social-media-terms



2 Literature Review

This section presents the background research that informed our study. We explore various types of fake news; then discuss key aspects of false information and their impact on society. We review the role of the media, how they have been affected by false information, and what media houses have learnt from previous and current mistakes in spreading false information. We then describe social media platforms, and how these sites have accelerated the sharing of information between people and communities. Finally, we examine young age and lack of experience of online users as factors in the uptake and dissemination of fake news, and the impact of fake news on health and behaviour.

2.1 Types of Fake News

Wardle, in the *Colombian Journalism Review* (2016), characterised fake news into six different types of false information:

1. Authentic material used in the wrong context: In this case, the contents of the information are not fake, but the incorrect context is used.
2. Imposter news sites: Sites such as Clone Zone allow imposters to clone a trusted news site to make their information appear credible.
3. Fake news sites: News sites created in order to manipulate and falsify information deliberately.
4. Fake information: This refers to fake information that is presented in graphics, images, and video. Such information is designed to be highly shareable and is often so creative and convincing in its delivery that most users do not think to question its authenticity, let alone know how or where to start checking.
5. Manipulated content: Images and videos that have been deliberately manipulated are a huge part of the news ecosystem. Because they can be created easily by bedroom hoaxers, they are often trivialised and dismissed as merely mischievous.
6. Parody content: Parody accounts are fan or commentary accounts on social media that provide social commentary on specific issues and companies.

While some of these are created with the purpose of satire or humour, others are made with the intention to hurt and deceive. However, people will have differing responses in how they view the information, and critical thinking skills (amongst other skill sets) are needed, therefore, in order to differentiate between what is authentic and what is false.

While many accounts on social media are tied to legitimate users, some social media users may be online bots manipulated by someone using a central command site. A social bot refers to a social media account that is controlled by a computer algorithm created by a real human being to produce content automatically and interact with humans on social media (Chu et al., 2010). Social bots can become malicious entities designed specifically with the purpose of causing harm, such as manipulating and spreading fake news on social media. Trolls – real human users who aim to disrupt online communities and provoke consumers into



an emotional response (Chu et al., 2010) – also contribute significantly to the proliferation of fake news on social media. Trolling behaviours directly target people’s mood, and often in the context of online discussions, which enables the easy dissemination of fake news among otherwise “normal” online communities. The aim of trolling is to trigger negative emotions in others, such as anger and fear, resulting in doubt, distrust and irrational behaviour. Finally, cyborg users spread fake news by blending automated activities with human input (Shu, Bernard & Liu, 2019). The easy switch between human trolls and online bots provide cyborgs with unique opportunities to spread fake news as they can easily change accounts to spread false information or inflict harm.

With the promise of anonymity online, some online users feel free to create and spread fake news for their own reasons. These include but are not limited to the points below:

- out of hatred, spite or jealousy
- for political reasons
- to promote an ideology
- to harm business competitors/government
- to promote their personal beliefs
- to receive reward/revenue from it

2.2 Dissemination and Impact of Fake News

The ways in which fake news is disseminated and how it affects people, particularly the youth, are investigated in the sections that follow.

The COVID-19 pandemic represents an opportunity and a challenge for the maintenance of society’s wellbeing both locally and globally. The crisis demands that individuals cooperate with one another. This cooperation requires that the quality of information to which people are exposed is always credible. However, misinformation about COVID-19 has proliferated on social media. Frenkel, Alba & Zhong (2020), using data from the United States, noted the urgent need for effective communication from trusted sources about the pandemic. Misinformation during COVID-19 has come in many forms, often with the intention of causing fear and confusion. Examples of false information include conspiracy theories about the virus being created as a biological weapon in China, and claims that coconut oil is an effective cure that kills the virus. Misinformation of this sort may cause people to turn to ineffective (and potentially harmful) remedies, to overreact (e.g. by hoarding goods) or more dangerously, to underreact, thereby placing themselves and others at risk as observed in the United Kingdom by Pennycook et al. (2020) when the pandemic started to have an impact on society.

2.3 Access to Information

During any pandemic, there are people who are afraid of contracting the disease, and so access to accurate information becomes critical in allaying fears and countering false information, thereby saving lives (Spinney, 2019). An enormous amount of information is distributed on social media platforms such as Twitter, WhatsApp, TikTok and Instagram. These platforms are information drivers that can create panic and anxiety amongst online consumers, including high school learners. There are added pressures on



learners who might not be able to distinguish between fake news and accurate information because they lack the necessary skills or information. Thus, they believe, share and act on unverified information because it originates from trusted sources (e.g. friends or family members). During times of crisis, false information is often circulated in an attempt to sow discord and create panic. With schools closing during the lockdown and many learners sitting at home and learning remotely, increased access to media platforms increases potential exposure to false information. Therefore, it is crucial in these times to have media outlets and other partners' fact-checking and being reliable sources of information.

Journalists have an important role in health communication. Importantly, media houses should acknowledge that misleading clickbait has the potential to distress the public by causing fear, and so may diminish the effect of counter measures intended to combat the outbreak. To promote awareness, journalists are encouraged to work closely with healthcare professionals, health scientists, government departments and community leaders to ensure accurate information is disseminated (Spinney, 2019). Effective communication not only contributes to reducing risky behaviour, such as visiting healthcare facilities unnecessarily or flouting health regulations, but it also helps reduce anxiety and fear by tackling false information.

High school learners are no longer solely gaining information from teachers or reputable media outlets; they are also exposed to high levels of (often unverified) information on social media platforms. In a large study on the ability of young adults to question, verify and accurately identify the information they find online, Stanford researchers found a “distressing” inability to decipher online content and a general lack of understanding on how social media platforms function (Domonoske, 2016).

2.4 Information Overload

Information has become increasingly accessible because of being widely distributed via various online channels and platforms. This has given rise to what we refer to as “information overload”, where high volumes of information overwhelm online consumers so that they become confused, and so are less likely to accurately ascertain the credibility and trustworthiness of the information to which they are exposed (Renjith, 2017). A pandemic (like any crisis) intensifies the spread of fake news further, which can have devastating repercussions. For instance, propelled by fears over a new health crisis, communities undoubtedly search for information relating to prevention and safety precautions. However, Depoux et al. (2020) noted that within weeks of the COVID-19 pandemic outbreak, there were already powerful conspiracy theories and misleading rumours proliferating globally about the origin and transmission of the virus.

Fake news, that is disinformation and misinformation, leads to widespread fear and panic as people tend to believe most of the information made accessible to them. Depoux et al. (2020) assert that a mass panic during a disease outbreak can be fought with the distribution of accurate and relevant information. In a study investigating the impact of factual information in rebutting the flood of misinformation during a pandemic, van der Meer and Jin (2020) discovered that the availability of evidence-based information during a disease outbreak is imperative in curbing deception and heavy reliance on inaccurate information. Thus, while the circulation of accurate information may be adding to the information overload in society, it is critical that such information is available.



2.5 Role of the Media

In guarding against false information that at times has rocked traditional media before the rise and prevalence of social media, there are important lessons that may be learnt from news coverage. At the time of the 9/11 attack on the World Trade Centre an email, reporting the involvement of three South Africans in the hijacking of the aeroplanes, was widely published in the South African media. These claims were proven to be false after extensive fact-checking, which resulted in news publications having to rectify false reports (Momborg, 2001; Mulder, 2001). Recently, on 5 April 2020, News24 made a blunder in a news report stating that Bill Gates intended to test a possible COVID-19 vaccine exclusively on subjects in Africa. News24 became aware of their mistake and apologised for it later that evening. Two days later News24 revealed that they had retracted the article and explained the details behind the fake news article that was passed as a factual news story (Cowan, 2020). However, Professor Herman Wasserman, a media studies lecturer interviewed in UCT News, contends that the South African media have “mostly [trodden] a careful path” by collaborating with the government where justified and asking critical questions where needed.

The spread of fake news and misinformation around the COVID-19 pandemic is becoming increasingly prominent on social media platforms (WhatsApp, Twitter and Facebook), with people or users making claims about causes of COVID-19 and a possible cure for it. Although there is scant literature on teenagers spreading fake news on social media, there is substantial research on cyberbullying amongst teens, which can provide insights. According to Rao, Bansal and Chandrin (2018) and the National Crime Prevention Council (2011), cyberbullying occurs in many forms, and one of them relates to misinformation. To illustrate, various studies conducted in South Africa on cyberbullying in schools indicated that perpetrators spread misinformation about their victims online (particularly on WhatsApp), often in the form of rumours to torment victims (Du Preez & Prinsloo, 2017; Farhangpour, Maluleke & Mutshaeni, 2019; Tustinet al., 2014).

2.6 Age as a Factor

Individuals respond to fake news differently, and it has been argued in the literature that age plays a fundamental role. Studies conducted to investigate the correlation between fake news and demographics on social media discovered age and level of education to be the two main factors contributing to the spread and acceptance of fake news (Guess et al., 2019; Rampersad & Althiyabi, 2020). Despite the noted damaging effects of fake news, it remains largely unknown why high school learners, in particular, continue to share false information. For some it may be to amuse or grab the attention of others, but for others it may be a genuine attempt to keep up with current affairs (Mercier, 2020). As the virus is new, the public have little knowledge about the virus, which has enabled the spread of fake news. Additionally, learners are said to perceive news supplied or endorsed by the government as, among other things, boring, delayed, insufficient, conflicting, ambiguous or not transparent, and therefore, they prefer social media as an alternative and more interactive information resource (Jang & Baek, 2019; Mercier, 2020). Social media platforms allow for the spread of news that may not be fact-checked. If learners are quick to trust and share news on social media, even if they have not distinguished whether that news is accurate or false, then the adoption of fact-checking tools and authenticating methods are essential skills that they need to reduce the spread of misinformation (Talwar et al., 2019).



A survey conducted at Loughborough University in London reported that young people are intentional distributors of inaccurate information, the results from the survey noted that minors were more likely to fall prey to fake news – especially from social media platforms, as opposed to adults – as a result of their cognitive skills not being able to assess and process the information critically. Minors who lack critical thinking skills are susceptible to fake news as they lack the critical skills to distinguish factual from false news. Thus, given that arguably one of the most vulnerable groups to the uncontrollable spread of misinformation during the pandemic are high school learners with access to social media, it is important to equip them with the necessary tools and critical thinking skills to protect themselves against fake news. It also suggests the need for schools to reinvent their curricula to incorporate the teaching of the above literacies. As a result, learners would be acquainted with skills that will allow them to flourish as digital natives (Malita & Grosseck, 2018).

2.7 Impact on Health

A pandemic affects both social and economic aspects of life with health being the primary target. The spread of false information is a critical problem during a pandemic: in trying to prevent infection, people tend to rely on any information made accessible to them, which can lead to vulnerability and exposure. Brainard and Hunter (2020), on the Ebola outbreak in West Africa, noted how misinformation led to unsafe burial practices of those who had succumbed to Ebola. This put the lives of those around the deceased in danger as the virus found new hosts and continued to spread. With the COVID-19 outbreak, the consumption of information from various social media platforms has also been found to be contributing to enhanced depression and anxiety. This was corroborated by a study conducted in South Korea that sought to investigate the impact of COVID-19 on psychological health: the study reported that over 50% of respondents indicated that they have been severely affected by the outbreak (Jung & Jun, 2020). Furthermore, studies conducted within the African continent have also highlighted that COVID-19 misinformation has resulted in a mental health catastrophe (Ornell et al., 2020; Tasnim et al., 2020) with people being uncertain about their physical, mental and financial wellbeing as a result of the pandemic.

2.8 False Information in South Africa

In the early stages of the South African lockdown, the possible impact of false information related to COVID-19 was largely addressed by a government that communicated effectively and media that were well organised and responsive to the public's needs. The government held many informative media briefings to combat false information, thereby building a partnership of trust between government and media. This strategy was prompted by numerous requests from media outlets and civil society groups that had observed trends of the impact of false information in the fight against COVID-19 in other countries, particularly in Italy (Busana et al, 2020) and the United States of America (USA). While we note these early-stage interventions against false information, nonetheless, below, we outline important legislative frameworks and partnerships that are aimed at combating the scourge of false information.

The government's communication strategy was praised by the WHO (Maromo, 2020). In addition, as fake news began to spread, and to dissuade people from spreading false information, the government issued a Government Gazette (South African Government, 2020) stating that the dissemination of fake news or disinformation about COVID-19 was a criminal offence in South Africa (Lubisi, 2020). Regulations relating to



COVID-19 in terms of the Disaster Management Act No 57 of 2002 criminalises the distribution of fake information in South Africa via any channel of communication. The section states that

(1) Any person who intentionally misrepresents that he, she or any other person is infected with COVID-19 is guilty of an offence and on conviction liable to a fine or to imprisonment for a period not exceeding six months or to both such fine and imprisonment.

(2) Any person who publishes any statement, through any medium, including social media, with the intention to deceive any other person about—

(a) COVID-19;

(b) COVID-19 infection status of any person; or

(c) any measure taken by the Government to address COVID-19,

commits an offence and is liable on conviction to a fine or imprisonment for a period not exceeding six months, or both such fine and imprisonment.

(Republic of South Africa, 2020)

While this law also applies to high school learners, the punishments meted out may be reduced because they are legal minors. Furthermore, many young people lack sufficient skills in identifying fake news and understanding social media platforms (Cooke, 2018; Journell, 2019), which could count as mitigating factors in a court of law. Consequently, this legal framework should not be seen as an end in itself, but rather as a deterrent borne out of the need to regulate the spread of information about the pandemic in an attempt to save lives, while simultaneously balancing the needs of freedom of expression as long as this freedom does not inflict harm. This decision appears to be based on observations of the deeply negative effects of rampant fake news in other countries, where people were infected in large numbers because of false information, whilst those governments focused on curbing the spread of the virus and neglected to address fake news sufficiently. However, critics point out that while this step appears necessary, questions remain about the possible impact on freedom of expression.

Increased collaboration between the private sector, non-governmental organisations and government agencies saw the establishment of an anti-misinformation initiative. Organisations formed before COVID-19 as fact-checking institutions have also used their experience in the field to develop their existing tools to verify information about the pandemic. For example, “Live Guide” by Africa Check is an all-in-one go-to webpage with tips and resources that aim to help the public and institutions curtail the spread of COVID-19 misinformation (Africa Check, 2020). Similarly, Media Monitoring Africa has set up an online portal² called “The Real 411” through which South Africans can report misinformation/disinformation with the aim of investigating it and potentially spreading a counter-narrative, if it is found to be fake news (Lubisi, 2020). These are important South Africa-specific resources for combatting the dangers of fake news and thereby, reducing stigmas and fears.

² See www.real411.org.za.



3 Research Findings

This section describes and interprets the data obtained from the parent/teacher and learner surveys that were distributed online, as outlined in the methodology section. Our findings and recommendations are presented in the sections that follow.

3.1 Learner responses

A total of 49 high school learners participated in this study. The majority of the learners were from Gauteng (53%), followed by learners from the Western Cape (30%), KwaZulu-Natal (9%), and with less representation from the Free State and Limpopo. There were no respondents from the Eastern Cape and Mpumalanga, which could be attributed to limited access to online platforms and digital resources. The use of online surveys as methodological tools for data collection may have been a factor that impacted on data collection. The respondents comprised: 49% Grade 12 students; 38% students in Grades 8 to 11; 13% students not at school. Participants were on average 16 years old. All the participants owned at least one device and 93% of the respondents had access to a cell phone. Seventy-three per cent (73%) of the respondents use social media/online platforms as their main source of news and information.

The gender distribution displayed in the graph below indicates that most of the learner respondents were female.

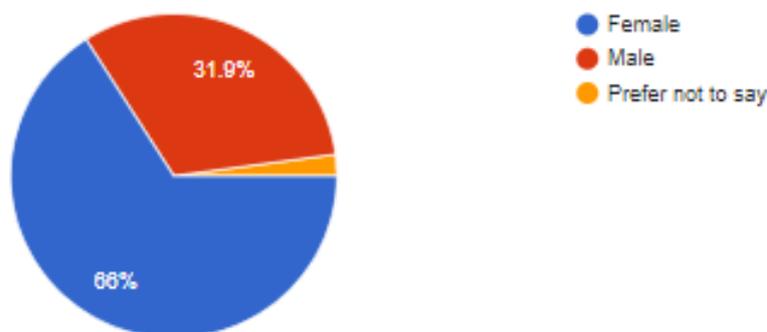


Figure 1: Gender distribution of learners

Learners were asked to reflect on how anxious fake news made them feel on a linear scale of 1 to 5 with 1 being not anxious at all and 5 being very anxious. The average anxiety level was a 3, which means moderately anxious. However, 19% of the respondents reported that it made them feel very anxious (as seen in Figure 2). Further investigation into the correlation between gender, anxiety and risky behaviour associated with fake news revealed that females reported that they remembered taking more risks after interacting with a fake news article than their male counterparts. The average anxiety levels when compared, for girls was -0.28 and the average for boys 0.05. There was, however, no significant relationship between gender and anxiety. In the whole sample, taking risks was negatively correlated with anxiety. This



means that the more anxious a respondent reported to be, the fewer risks the persons reported to take, perhaps out of fear of consequences.

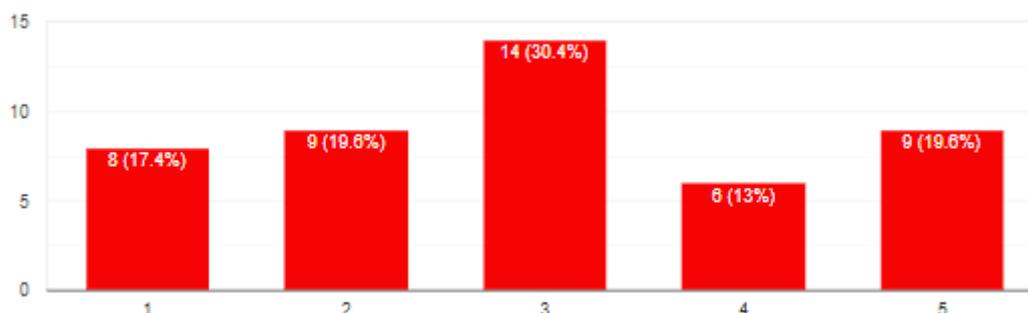


Figure 2: Learners' anxiety levels related to fake news on a scale of 1 (not anxious at all) to 5 (very anxious)

We used the definition of fake news found in social media as a video, audio, and/or text content that spreads false information from a specific user account. Ninety-two per cent (92%) of learners self-reported that they are aware of what fake news is and the impact of spreading fake news. However, the frequency of information sharing without verifying the source or doing further research was relatively high. Twenty-three per cent (23%) of the respondents indicated that they hastily shared information with peers often without verifying, and 49% of them shared it sometimes. Therefore, we can conclude that learners are only aware of the impact of fake news when it is relevant to them, but are unaware of their own roles in spreading it.

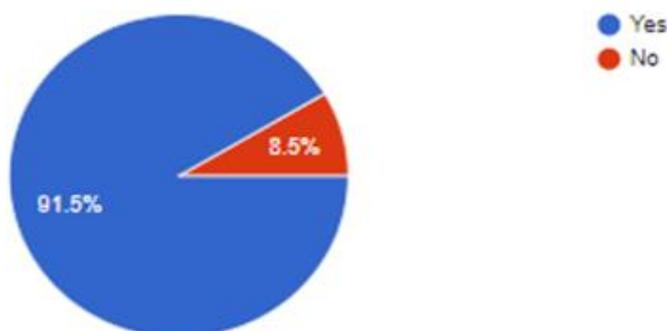


Figure 3: Learners' levels of awareness of the concept "fake news"

We noted a direct correlation between the number of devices to which learners have access and their reported levels of both anxiety and risky behaviour. We also found a positive correlation between parent/teacher support in counteracting the dissemination of fake news and learners' level of awareness. As a result, we advocate for greater and continued parent/teacher support to reduce the hasty sharing of information (thereby curbing the spread of fake news) and for learners to be equipped with the soft skills and literacies needed to manage the impact of fake news better. Furthermore, actions such as reducing the



amount of time spent online, monitoring the quality of news sources accessed, and limiting the number of devices to which learners have access can also have added benefits.

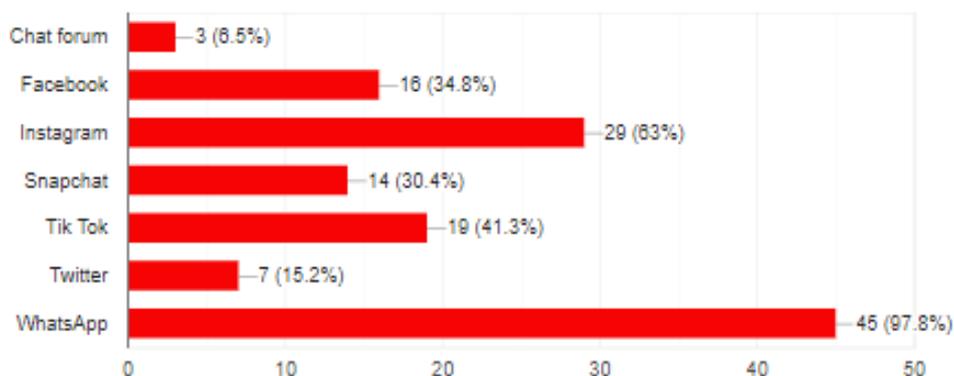


Figure 4: Learners' preferred social media platforms (more than one option could be selected)

WhatsApp was the learners' most popular social media platform to use. Greater efforts need to be made towards implementing stricter policies when it comes to content sharing and source verification on this platform to reduce the impact and sharing of fake news. While we acknowledge that the application creators have limited the number of times a user can forward a chain message during this pandemic in an attempt to curtail the spread of fake news, we believe stricter measures should be put in place globally as many people use this platform to share information.

3.2 Parent/Teacher responses

The parent and teacher survey was answered by 22 participants and of these nearly 64% were female. The majority of respondents fell within the 31–34 years age range (31.8%). One respondent was between the ages of 20–24 years and two respondents were between the ages of 55–60 years. Most respondents were situated in Gauteng (40.9%). KwaZulu-Natal had the second-highest number of respondents at 18.2%. Responses were also gathered from the Free State, North West, Eastern Cape and Western Cape. No responses were obtained from the Northern Cape, Limpopo or Mpumalanga. As with the learner survey, access to technology and data costs may have inhibited participation across digital platforms in these provinces. Of the respondents, 45.5% were parents of high school children, 31.8% were high school teachers and 9.1% were both parents and teachers.

Table 1: Distribution of parent/teacher respondents by age group

Age group	Counts	% of Total
20-24	1	4.5%
25-30	3	13.6%
31-34	7	31.8%
35-40	2	9.1%
41-44	4	18.2%
45-50	3	13.6%
55-60	2	9.1%



As reported in the survey responses, a wide variety of platforms are accessed by parents and teachers for their own use. WhatsApp was the most prevalent with 90.9% of respondents indicating that they use it. Facebook was the second-most-used platform, followed by Instagram and Twitter. Unlike the learners, Snapchat and Tik Tok are not preferred platforms amongst parents and teachers. More than a third of respondents indicated that they use a combination of up to four platforms. This means that users are most likely exposed to misinformation/disinformation across several different platforms, contributing to information overload. Sophisticated skills are required to understand the nuances and conventions of each platform in order to be aware of possible sources of fake news and to be able to detect questionable content across platforms.

The most popular source (95.5%) for obtaining news or information among the parents and teachers surveyed was online, that is, via news websites or social media platforms. Respondents equalling 86.4% also turned to the television for news and information. Peers or friends were also indicated as sources of news and information with 72.7% of respondents using this method for verification. Radio was used by nearly 60% of respondents. Most respondents indicated that they use a variety of platforms with almost 41% of respondents using a combination of three sources to obtain news and information. As with the range of platforms accessed by this group, the opportunities for misinformation/disinformation to spread (due to conflicting messages across media) have the potential to cause harm. Nevertheless, various news sources (radio, television news, etc.) can corroborate accurate information or cast doubt on suspect information from social media platforms, and so could potentially be a benefit.

All respondents indicated that they are aware of the meaning of the term “fake news”. However, almost a quarter of respondents (22.7%) were unsure if they were equipped to differentiate factual information from fake news. A further 9.1% reported not feeling equipped at all.

A decrease in feeling equipped to differentiate fake news from factual information was correlated with an urge to immediately share “interesting” or “aggravating” news with others. This was, however, a weak correlation, and so may have been due to chance ($r = -.39$, $p = .14$). Furthermore, respondents who felt equipped reported verifying the information first, but the correlation was also weak as it was only significant at the 90% level ($r = 0.37$, $p = .09$). Respondents, who were unsure if they were equipped, reported immediately sharing fake news as soon as they received it. There was a moderate correlation between feeling uncertain if one was equipped with the skill to identify fake news and the immediate urge of wanting to share interesting or aggravating articles or news with others ($r = .482$, $p = .02$). The data showed that not feeling equipped to differentiate between factual information and fake news was associated with ignoring such information ($r = .418$, $p = .05$). While ignoring potential fake news may seem to be a good strategy, it means that the fake news continues unabated because individuals did not report or contest the fake news. It also prevents individuals from building the skills to differentiate factual information from fake news, which may be detrimental in the long term as technology evolves, and the ways in which false information is generated become increasingly sophisticated.

4 Strategies to combat Fake News

Information overload and its overwhelming effects can lead to widespread confusion, and such a climate needs to be confronted with accurate information. As South Africa navigates through the spread and



impact of false information, we need to go beyond legislating and criminalising the spread of false information, additionally building collaborative partnerships in society to educate people about the pandemic and counter false information surrounding it.

Since our research focus is directed towards ameliorating the effects of fake news on young people, we also wish to promote critical skills development in high school learners in an attempt to equip them with the necessary skills to identify and process online information. Critical thinking skills and literacy skills, as a measure to counter the spread of false information, are an urgent necessity for learners because without these skill sets they remain vulnerable to false information. Without outlining extensive research on the health impact of false information on the youth, we are, however, of the view that false information about a pandemic may lead to risky behaviours, especially if people are told about possible cures or the availability of untested, dangerous preventative measures that have not been proven to be true. From this literature review, we gained further insights into the need to expand targeted research on the impact of false information on youth, and how this can be included in the basic education curriculum.

4.1 Awareness

Given the popularity of WhatsApp amongst learners, parents and teachers emerging from the survey responses, any awareness-raising campaigns about fake news would do well to focus on this platform. WhatsApp is private in the sense that engagement is between specific individuals or in closed groups, and information is encrypted. It is more difficult for adults to be aware of information that is being spread using the messaging service, and so it is more difficult to intervene. Thus, initiatives aimed at preventing the spread of fake news should address these private, closed networks without impacting on privacy.

Other platforms have the advantage of being public, so parents and teachers can monitor children's engagement with these platforms. Of course, teenagers can find ways around this. Regardless, we assume that adults have some access to what their children are consuming and posting on their online platforms, and they can mitigate harm by teaching safe and responsible use to their children.

Parents also need to make a concerted effort to engage with the platforms their children prefer to use. There is some discrepancy between the platforms that adults frequent in comparison to the platforms their teenagers use. Adults engaging with these other platforms would assist them in checking on their children's activity online and in understanding the mechanics of these platforms. Support from significant adults is needed to help children identify and respond to fake news, but this is only possible if adults are informed.

The data indicates that for both children and adults, there is a need to build skills for identifying fake news and knowing how to respond to false information. Perhaps the greater need is to raise awareness around the impact of sharing potential fake news even if this is only to share surprise or amusement. Adults and children may share information that is false because they find it amusing, but this may cause harm to others because it creates confusion and mistrust across many networks. The need to teach and create awareness is of great importance to ameliorating the effects of fake news on high school learners, and, therefore, in the sections that follow, we discuss steps that can be taken to ameliorate the impact of fake news.



4.2 Skills development

The need to counter false information requires young people to be equipped with the skills to do so. While the effects of false information are known, it is the development and transfer of skills that we believe high school learners require to make informed decisions. This section details what we recommend should be done to identify and curtail the effects of fake news on young people. The teaching of critical literacies is an urgent need, which has the potential to equip high school learners with the necessary skills to process and verify information. We propose the teaching of the critical literacies outlined in the following section as a possible measure to empower high school children in the era of information overload beyond the COVID-19 pandemic.

4.3 Literacies for skills development

There is no doubt that fake news takes centre stage over factual news and spreads far more quickly. Interestingly, this is not a new challenge, but has existed as long as the newspaper industry has (Martens et al., 2018). However, it has been accelerated by information and communication technologies (ICT) such as social media, which have become prevalent in spreading information. Fake news thrives on social media platforms where high volumes of information are instantly shared without the traditional approaches of vetting, carefully and critically examining content (e.g. editors, publishers, media watchdogs). The onus to verify falls on the individual, thus increasing the spread of misinformation/disinformation (Spratt and Agosto, 2017). Therefore, the reinvention and acquisition of skills to survive in the digital environment is an urgent one. Various authors from the global north have identified several skill sets that can assist in critically evaluating online content, thereby curbing the spread of fake news (Dell, 2019; Jones-Jang, Mortensen & Lui, 2019; Polizzi, 2020). These include related literacies, namely, information literacy, digital literacy, media literacy, news literacy, as well as analytical and critical thinking skills. The argument is that these may address different issues as far as information in a digital landscape is concerned. The focus of the following sections is restricted to information literacy, media literacy, digital literacy and scientific literacy as the critical skills high school learners require to navigate fake news.

4.3.1 Information literacy

Information literacy is the foundational competency that online media consumers require in order to verify the accuracy, relevance and reliability of a news item or source, according to Jones-Jang et al. (2019). This ability allows an individual to navigate and uncover information in order to make decisions and take action once the information has been processed by the individual.

We view information literacy as an important skill set because in the context of false information during a pandemic, false news stories threaten the population's ability to form good, evidence-based decisions on vitally important matters (Van der Linden et al., 2017 in Rubin, 2019). If high school learners are only receiving poor or inaccurate information about COVID-19, and they do not possess the ability or skills to fact-check the information they are exposed to, then they are likely to make risky or dangerous choices that could impact on their own health and the health of those in their communities. People with information literacy skills are considered to have close-reading skills, scepticism, awareness of their biases, understanding of how information is produced and the ability to synthesise information from different



sources; and these skills are also key in detecting fake news (Delellis & Rubin, 2018). However, partly due to the sheer volume of information being shared online (what we call information overload), many online news consumers cannot spare the time to fact-check every item they read, and furthermore, they often do not read past the headlines (Rubin, 2019). These poor information-seeking behaviours mean that people are more susceptible to believing fake news and passing it on. To lessen the burden of fact-checking and evaluating sources, some US educators have advised their students do so only for those items they intend to act on or to share (Berdik, 2016). It is our view that information literacy as a skill set equips the individual with the ability to reflect on the impact regarding the self when it comes to acting on false information.

4.3.2 Media literacy

Media literacy has been shown to improve learners' ability to differentiate inaccurate and verifiable political claims (Kahne and Bowyer, 2017 in Hobbs, 2017) although Jones-Jang et al. (2019) argue that it is less effective than information literacy. News literacy is regarded as a subset of media literacy, but for the sake of space and clarity we discuss both in this subsection under the broader banner of media literacy. We understand media literacy to refer to the broad ability to access, analyse, evaluate, create, and act using all forms of communication (Farmer, 2019). Similarly, news literacy refers to these same abilities but is restricted to traditional news content rather than all forms of communication.

A key part of media literacy is understanding the need for a free press and freedom of speech, and understanding how the press (and fake news) functions and what the possible motivations for releasing news content are (Spratt and Agosto, 2017). The press, while informative, have financial motives for releasing content, but are also often motivated by the pursuit of truth and justice (Palmer, 2017). It is crucial that media consumers are aware of the motivations of online content in order to assess and respond to each item appropriately (Farmer, 2019). News in the age of the Internet has changed from focussing on accuracy and detail to short sensationalist content that is quickly produced often without verifying sources (Rubin, 2019). Many fake news operators have items that are spreading much faster because of their emotive, sensationalist content (Hobbs, 2017). In an attention economy, the more clicks these websites get, the more ad-revenue they receive. Additionally, many fake news producers are politically motivated, desiring a certain worldview to spread or an increase in support for a particular political entity. Fake news is particularly powerful because the information is drawn from confirmation bias – when the content of the information aligns with a particular belief system – which means that we might be less likely to question the veracity of the story (Hobbs, 2017). It is vitally important, therefore, for media literacy to include personal reflections on our own biases.

So how can media literacy skills be included in education and information distribution? Palmer (2017) states that a media literacy curriculum should include the following:

So how can media literacy skills be included in education and information distribution? Palmer (2017) states that a media literacy curriculum should include the following:

- Looking for sources in articles
- Checking news sites (using 'About Us' tabs and site archives)
- Searching for multiple sources to verify content
- Using fact-checkers
- Showing the difference between "fake" and biased news



- Acknowledging personal biases

Hobbs (2017) states that specific terms such as “clickbait”, “hoaxes”, “sponsored content”, “pseudoscience” and “propaganda” aid in categorising fake news into particular types of news making it easier to tackle in the classroom and at home. Some news literacy educators in the US have found that employing teenagers’ general dislike for being told what to think could be a strong motivating factor for learning about fake news (Berdik, 2016). Teenagers appear more interested in uncovering fake news from the perspective of deciding something for themselves and not being fooled.

4.3.3 Digital literacy

Digital literacy is having the ability to navigate online spaces confidently and successfully. While many educators and parents believe that teenagers are online natives, this does not mean that they are not in need of digital education and guidance. Stanford University, in its study on digital literacy focused on youth, found that high school learners and university students struggled with differentiating between advertising and news items online, and that there was widespread confusion surrounding accessing information online (Spratt and Agosto, 2017). Sharing information such as web-browser extensions that provide alerts about possible fake news items can help users navigate through more reliable sites in online searches, according to Malita and Grosseck (2018). However, Rubin (2019) states that such technologies can assist, but do not replace human judgement; that is, we cannot solely rely on automated solutions to make a judgement on what might be harmful.

As this study has shown, many young people read their news on social media platforms, so understanding how these platforms function is an important digital literacy skill. Social media platforms enable unregulated content to be shared at a lightning pace, and this interaction has created the perfect environment for misinformation and manipulation to spread (Waldrop, 2017). Unlike traditional news agencies that are vetted by publishers, editors and media watchdogs, the information on social media platforms can be widely shared with none of these accountability measures. This lack of a vetting process may lead to increased misinformation as a result of the unavailability of checks and balances to verify sources of information. The need to be digitally literate goes beyond being able to use a device or a social media platform. Instead, we contend that the use (input) of a device coupled with the ability to navigate the world-wide web requires a critical literacy skill set that advances knowledge gaining and knowledge sharing (output).

4.3.4 Scientific literacy

Being guided by science during a health crisis is obviously very important, and so information that is widely shared should be based on scientific research rather than untested and dangerous solutions. Therefore, health literacy and more broadly, scientific literacy plays an important role in combating misinformation. Correct health information is pivotal to fighting both a disease and the fear surrounding it. To illustrate this, in the Democratic Republic of Congo at the height of the Ebola outbreak, public health workers worked furiously to counter misinformation surrounding the disease on social media, arguing that controlling the narrative was central to fighting the disease (Spinney, 2019). Local government, scientists, health workers and various international aid agencies worked together as “a single response team” using radio, social media and contact with communities and religious leaders to combat the spread of fake news (Spinney, 2019:213). Such a partnership based on science is vital to save lives.



Scientific information is important in fighting fear and stigma surrounding any public health crisis, but often the lack of scientific literacy skills means that people are unable to fully comprehend advice given. To corroborate the need for scientific literacy for youth in school, Nordheim et al. (2019), in a study conducted on Norwegian teenagers who had completed their compulsory schooling (Grade 10), found that these learners generally did poorly in identifying and critically evaluating health claims made in a simple news item, although those with higher science marks fared better. They argued that science curricula focus on facts rather than skills to the detriment of learners' scientific literacy. In advancing our view on the need for specialised literacy skills, we argue that various subjects in high schools (language study, natural sciences, technology, life orientation, etc.) should be addressing this literacy skills shortage.

4.4 Role of the Department of Basic Education

The DBE, in fulfilling its constitutional obligation to provide quality education, ought to invest in a curriculum that fosters and encourages the development of critical skills and literacies. The literature used in this study highlights what developed countries have done in their quest to nurture these skills, and some may not be applicable to the South African education context. High levels of inequality are the hallmarks of our education system with many disadvantaged learners attending dysfunctional schools that lack sufficient infrastructure such as classrooms, proper sanitation and furniture (Spaull, 2019). The task of education delivery becomes challenging, particularly for those learners who are poor. The cost of data and poor connectivity mean that the application and use of these skills, while needed, might not be used as and when the situation requires. The urgent need to confront levels of inequality in the basic education sector should remain a priority as the continuation of these conditions means that children who attend poorly resourced schools both in form (infrastructure) and content (inadequate teaching and learning) will continue to fall prey to false information. This miseducation only furthers the information (and digital) divide and deepens poverty. Confronting inequality in the education system means bridging the digital divide and improving critical literacy skills in poor communities, not only advancing and supporting the needs of middle-class communities.

5 Recommendations and conclusion

5.1 Recommendations

These recommendations are directed to the curriculum division of the DBE, as well as South African newsrooms and editors, to encourage them to rethink their approach towards informing young people.

1. Media houses should continue to update their ability to detect fake news by improving their verification processes in the newsroom before finalising their stories.
2. The introduction of information and digital literacy into the schooling curriculum should aid and support the distribution of digital learning materials such as tablets.
3. The DBE curriculum should be reviewed as it relates to the teaching of critical literacies and skills, and these changes should be aligned to the developmental needs posed by increased digitisation.



4. Beyond criminalising the spread and distribution of false information, governmental and non-governmental partners should brainstorm practical and educational ways of creating awareness about fake news.
5. To curb the diffusion of misinformation, the government should aim to provide timely, accurate and trustworthy information about COVID-19 through popular communication channels to work with people's reliance on social media for their information about the virus.
6. The curriculum needs to be equipped with content that teaches young people in high school about the dangers of spreading false information; and they should be taught critical literacy skills through subjects such as history or home language study.
7. Social media companies should improve the detection of posts or links containing false information related to any pandemic as this drives risky behaviours and conspiracy theories.

5.2 Concluding Comments

The spread of false information can be extremely damaging not only to the individual but also to efforts to save lives, especially during a time when the world and South Africa are looking at preserving lives from this deadly virus. This means that government, the DBE, media, teachers, parents/caregivers and learners must be equipped with the knowledge and skills to distinguish fake news from trustworthy information and the dangers of spreading false information. We also note that the South African government in the early stages was very proactive in its efforts to counteract fake news with regular briefings to the public and media about the pandemic and passing strict legislation to curb the spread of false information. However, in recent weeks, regular briefings of the public have not happened, and the lack of information has caused fear and distrust of how government is handling the pandemic and growing resistance to the continuing severe lockdown restrictions. The lack of transparency by government provides fertile ground for the dissemination of misinformation/disinformation about the pandemic. This underlines the urgent need to be transparent and frequent communication from government to counteract any false information that might pose a threat to the public.

This paper has outlined the harmful effects of fake news on learners, especially high-schoolers, who cannot attend school during the lockdown, and have gone online in accessing educational materials and are using all forms of media for many hours a day for their schooling. Parents, caregivers and teachers need to help counteract fake news now and when schools re-open, and in the longer term the DBE must include sections in the curriculum that develop the skills that learners need to identify fake news and prevent its dissemination.



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Appendix A: The Research Team

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Bea	Hubbard	Researcher
Dina	Mashiyane	Researcher
Bianca	Van Heerden	Researcher
Nomcebo	Dladla	Researcher
Bennita	Benza	Researcher
Emma	Schneider	Researcher
Bongiwe	Dlutu	Researcher
Maureen	Mosselson	Editor
Charlene	Deacon	Overall mentor
Morongoa	Masebe	Overall coordinator



Annexure 1: Learner survey

JET Education Services has recently launched a researchers' boot camp in an effort to contribute meaningfully to solutions and pressures being placed on society by the COVID-19 pandemic. For more information, please visit: <https://www.jet.org.za/research-bootcamp>.

One part of the research project investigates how fake news is impacting secondary school children, how it impacts their behaviour, risk-taking and anxiety levels, and how to help them.

We would like to know how fake news impacts your life. Please take a few minutes to complete this form. All data is collected anonymously. By entering information, you give consent for the results to be used for research purposes.

Responses will be accepted until midnight on Friday 17 April 2020. Thank you for participating in this study.

Which grade are you in?

- Grade 8
- Grade 9
- Grade 10
- Grade 11
- Grade 12
- Not in school

How old are you?

- 12 years
- 13 years
- 14 years
- 15 years
- 16 years
- 17 years
- 18 years
- 19 years
- 20 years
- 21 years
- Other

What is your gender?

- Female
- Male
- Prefer not to say

Which province do you live in?

- Eastern Cape
- Free State
- Gauteng
- KwaZulu-Natal



Limpopo
Mpumalanga
North West
Northern Cape
Western Cape

Which devices do you own?

Cellphone
Tablet computer
Laptop or desktop computer
None of the above

Where do you get your news or information from? Please tick all that apply to you.

Radio
Television
Peers/friends
Significant adult (teachers/parents)
Social media/online platforms
Other

Which platforms do you use? Please tick all that apply to you.

Chat forum
Facebook
Instagram
Snapchat
Tik tTok
Twitter
WhatsApp

Do you understand what is meant by the term Fake News?

Yes
No

How often do you share information without checking it is true?

Often
Sometimes
Never

How do you respond to aggravating or interesting articles/news?

Immediately share it with friends/family.
Look for articles that talk about the same thing (do more research).
Verify the source.
Ignore it.
Other

Does fake news cause you to feel anxious or worried?

Not anxious at all



A little anxious
No anxiety
Somewhat anxious
Very anxious

Has fake news changed your behaviour in the past?

I didn't pay much attention to it.
I noticed it but my behaviour didn't change.
No change in behaviour
My behaviour has changed a few times.
I have done things that are not my normal behaviour as a result of fake news.

Does fake news cause you to take more risks than you normally would?

Yes
No

Have your parents or teachers helped you to understand and/or identify fake news?

Yes
No

What do you think is the impact of sharing/spreading fake news during this COVID-19 pandemic? Please tick all that apply to you.

It causes stress and anxiety.
It causes panic.
It does not have an impact.
Negatively influences people's behaviour
Spreads misconceptions
Other

Has the current school curriculum equipped you with the skills to differentiate between factual and fake news?

Yes
No
Not sure



Annexure 2: Parent and teacher survey

JET Education Services has recently launched a researchers' boot camp in an effort to contribute meaningfully to solutions and pressures being placed on society by the COVID-19 pandemic. For more information, please visit: <https://www.jet.org.za/research-bootcamp>.

One part of the research project investigates how fake news is impacting secondary school children, how it impacts their behaviour, risk-taking and anxiety levels, and how to help them.

We would like to know what you think, in relation to your children or learners in secondary school. Please take a few minutes to complete this form. All data is collected anonymously. By entering information, you give consent for the results to be used for research purposes.

Responses will be accepted until midnight on Friday 17 April 2020. Thank you for participating in this study.

How old are you?

- 20—24 years
- 25—30 years
- 31—34 years
- 35—40 years
- 41—44 years
- 45—50 years
- 51—54 years
- 55—60 years
- 61—64 years
- 65—70 years
- 71 years and older

What is your gender?

- Female
- Male
- Prefer not to say

Which province do you live in?

- Eastern Cape
- Free State
- Gauteng
- KwaZulu-Natal
- Limpopo
- Mpumalanga
- North West
- Northern Cape
- Western Cape

Which option applies to you?

- I am a parent of a secondary school child



I am a teacher of secondary school children

I am both a parent and teacher of secondary school children

Where do you get your news or information from? Please tick all that apply to you.

Radio

Television

Peers

Social media/Online platforms

Other

Which platforms do you use? Please tick all that apply to you.

Chat forum

Facebook

Instagram

Snapchat

Tik Tok

Twitter

WhatsApp

Do you understand what is meant by the term Fake News?

Yes

No

How often do you share information without verifying if it is true?

Often

Sometimes

Never

How do you respond to aggravating or interesting articles/news?

Immediately share it with friends/family.

Look for articles that talk about the same thing (do more research).

Verify the source.

Ignore it.

Other

Do you feel that you are equipped with the skills to differentiate between factual and fake news?

Yes

No

Not sure

Do you feel like you have equipped your child/children/learners with the skills to differentiate between factual and fake news?

Yes

No

What do you think is the impact, on high school children, of sharing/spreading fake news during this COVID-19 pandemic?



It causes stress and anxiety.

It causes panic.

It does not have an impact.

Negatively influences children's behaviour

Spreads misconceptions

Other

Do you think the current school curriculum has equipped your child/children/learners with the skills to differentiate between factual and fake news?

Yes

No

Not sure

