

## **Future Trends Written Report**

### **Title: Manipulation of Big Data in social media: How will it impact teenagers**

Based on Analysis of the Team's Chosen Community / Organisation in Mid-Term and Final Evaluation

Community / Organisation Studied: Teenagers aged 13-20

#### STEP 1. Identify Challenges

*Read the Future Scene carefully and generate ideas for challenges, concerns, and possible related problems. Choose the 5 most important challenges and write them in the space provided. Include applicable research with appropriate in-text citations.*

#### **Challenge #1:**

**OBSERVATION:** Based on our survey of 37 responses, 29.7% of our respondents strongly agreed and 45.9% of our respondents agreed that Social Media influenced teenagers' political viewpoints.

**WHY:** This is a problem because not all politicians might be social media savvy, and that it can influence teenagers in the wrong way. It might limit their viewpoints and they might choose to vote for a party that is the most trending instead of the one that they relate to, which can prove to be a problem to politicians who are less savvy. Also, many political ideas can be shared through social media, which is a double-edged sword. Sometimes, teenagers might be influenced by these ideas and might even develop extremist ideas should they be "brainwashed" online by certain extremist groups.

**RESEARCH:** According to a RAND article, ISIS is using social media to spread online propaganda and recruiting many young people to join their cause, which shows that social media can be used to influence people's mindsets and views. During the recent General Elections in Singapore, due to the coronavirus pandemic, politicians turned to social media platforms to engage the public and promote its policies. While the People's Action Party won most of the seats, the opposition parties won more seats than the previous elections. This might be because

they attracted a larger social media presence than the PAP, which shows that social media can be extremely crucial in politics.

### **Challenge #2:**

**OBSERVATION:** Based on our survey of 37 responses, 43.2% of our respondents strongly agreed and 51.4% of our respondents agreed that Social Media impacted social issues.

**WHY:** Big Data can also have a huge influence on social issues. Today, a large percentage of adolescents are connected through social media. As the year progresses, technology would be even more developed and the use of it would be even more widespread. Thus, it is possible that Big Data would have a huge influence on social issues, for example, cyber-bullying, relaying false information, and fake news. Another threat that the manipulation of Big Data in social media poses to the future generation is the spread of false information. Fake news is often spread through the use of dishonest websites, which, to gain attention and trust, specialize in creating attention-grabbing news, which often disguises themselves as famous news outlets. As the younger generations tend to be more gullible, they might easily fall into the trap of fake information. This might cause unnecessary panic or unfair hatred against certain groups of people. The community might become disunited, to the extent that there might even be riots and violence caused as a result of false information.

**RESEARCH:** One fake news during somewhere in March 2020 was that there were apparently tanks and police on the streets to enforce the lockdown due to the coronavirus situation. The news went viral and people panicked. However, that soon proved to be untrue. This causes unnecessary panic among people, which can lead them to do foolish actions.

### **Challenge #3:**

**OBSERVATION:** Based on our survey of 37 responses, 45.9% of our respondents were neutral, while 13.5% of our respondents strongly agreed and 18.9% of our respondents agreed that Social Media has limited creativity among teenagers.

**WHY:** Big Data in social media can also limit innovation among teenagers. Innovation refers to the creative mindset and making changes in something established, especially by introducing new methods, ideas, or products. Big Data impedes innovation by imposing pre-existing faculties and boundaries unto people. With these innovations, the future generation, teenagers, do not see the need to innovate and bring about change as they are comfortable in the existing boundaries. The massive number of shares and likes in social media distracts designers and artists from the real creative process. Instead of conceptualizing and brainstorming a novel idea, teenagers are often caught up reviewing others' shares and drawing inspiration from other resources. This consumes the time and effort required to start one's project. While there are lots of creative

resources on social media websites, there should be a balanced use for these websites. Teenagers are caught up in following trends to gain traction for themselves that they develop a mindset and are unwilling to put in the effort nor time to innovate. Also, the fear of potential backlash leads teenagers to follow pre-accepted ideologies, restricting their freedom as they lack the courage to explore an untapped region.

**RESEARCH:** One evident example which points to the decline of creativity over the years would be Kyung Hee Kim's recent research report documenting a continuous decline in creativity among American schoolchildren over the last two or three decades. Kim, who is a professor of education at the College of William and Mary, analyzed scores on a battery of measures of creativity—called the Torrance Tests of Creative Thinking (TTCT)—collected from normative samples of schoolchildren in kindergarten through twelfth grade over several decades. According to Kim's analyses, the scores on these tests at all grade levels began to decline somewhere between 1984 and 1990 and have continued to decline ever since. The drops in scores are highly significant statistically and in some cases very large. In Kim's words, the data indicate that "children have become less emotionally expressive, less energetic, less talkative and verbally expressive, less humorous, less imaginative, less unconventional, less lively and passionate, less perceptive, less apt to connect seemingly irrelevant things, less synthesizing, and less likely to see things from a different angle." According to Kim's research, all aspects of creativity have declined, but the biggest decline is in the measure called Creative Elaboration, which assesses the ability to take a particular idea and expand on it in an interesting and novel way. Between 1984 and 2008, the average Elaboration score on the TTCT, for every age group from kindergarten through 12th grade, fell by more than 1 standard deviation. Stated differently, this means that more than 85% of children in 2008 scored lower on this measure than did the average child in 1984. This shows that teenagers are becoming less creative over the years. This has a clear relation to the prevalence of social media platforms over the years. Teenagers adopt and conform to the same structure in mindset which has been proven successful over the years. Teenagers are unwilling to challenge boundaries that have been pre-determined by previous generations.

#### **Challenge #4:**

**OBSERVATION:** Based on our survey of 37 responses, 29.7% of our respondents strongly agreed and 48.6% of our respondents agreed that Social Media led to an increase in discrimination.

**WHY:** Big Data in social media might cause discrimination among teenagers. Big Data organizes users into categories to target their users better. Social categorization allows for better navigation of the social media platform and provides a sense of predictability and order. This may lead to discrimination of certain groups of users. For example, Facebook, Instagram, and

various social media platforms know your race, your gender, your interests, etc. These social media platforms would store it in a profile to market posts better. Some stereotypes are informed generalizations about a group of people. It is generally true, but it does not entirely represent that particular group of people. Hence, many of our stereotypes are invalid— particularly when they are based on race, religion, or gender. Because of this, stereotypes can be problematic and counter-productive when working with diverse others. Mishandling of Big Data might lead to prejudice and discrimination among teenagers, dividing the world apart and causing unneeded tension between different communities. Should Big Data also be mishandled, there might be potential leaks. Thus, teenagers might be targeted due to their preference or personal history, which can be very dangerous. Oftentimes, teenagers also lack discernment in their judgment of information, which may result in them misinterpreting various categories as class differentiation. A particular bias towards categories of people will also be subconsciously established in teenager's minds, which will affect their view of humanity and may even lead to unwise decisions in their lives.

RESEARCH: A book titled “Principles of Social Psychology--1st International Edition” states that Thinking about others in terms of their group memberships is known as social categorization—*the natural cognitive process by which we place individuals into social groups*. Social categorization occurs when we think of someone as a man (versus a woman), an old person (versus a young person), a Black person (versus an Asian or White person), and so on (Allport, 1954/1979). Just as we categorize objects into different types, so do we categorize people according to their social group memberships. Once we do so, we begin to respond to those people more as members of a social group than as individuals. Following the definition of social categorization, it further explains the negative impacts of social categorization. One problem is that social categorization distorts our perceptions such that we tend to exaggerate the differences between people from different social groups while at the same time perceiving members of groups (and particularly outgroups) as more similar to each other than they actually are. This overgeneralization makes it more likely that we will think about and treat all members of a group the same way. We tend to see people who belong to the same social group as more similar than they actually are, and we tend to judge people from different social groups as more different than they actually are. The tendency to see members of social groups as similar to each other is particularly strong for members of outgroups, resulting in outgroup homogeneity—*the tendency to view members of outgroups as more similar to each other than we see members of ingroups* (Linville, Salovey, & Fischer, 1986; Ostrom & Sedikides, 1992; Meissner & Brigham, 2001).

## **Challenge #5:**

**OBSERVATION:** Based on our survey of 37 responses, 32.4% of our respondents strongly agreed and 37.8% of our respondents agreed that teenagers' privacy on Social Media is vulnerable and insecure.

**WHY:** As more personal information is collected up by the ever-more-powerful computers, big data has become available for not only legitimate uses but also abuses. Big data has an enormous potential to revolutionize our lives with its predictive power. However, due to the possibility of malicious use, there are both security and privacy threats of big data you should be concerned about, especially as you spend more time on the Internet. Due to the sheer number of people involved in big data security incidents, the stakes are higher than ever. Because of the huge amount of data that is present, it becomes hard to ensure that the privacy of each person is safe and secure and will not fall into the hands of others that may or may not use it for malicious activities.

**RESEARCH:** In a data breach of eBay in 2014, 145 million people whose passwords as well as email addresses, birth dates, mailing addresses and other personal information were stolen. In addition, in a data breach of Target in November 2013, cyberattackers gained access to Target's computer gateway served through credentials stolen from a third-party vendor. Using the credentials to exploit weaknesses in Target's system, the attackers gained access to a customer service database, installed malware on the system and captured full names, phone numbers, email addresses, payment card numbers, credit card verification codes, and other sensitive data. This breach affected 41 million customers' payment card accounts as well as the contact information for more than 60 million customers.

## STEP 2. Craft the Underlying Problem

*Using the challenges listed in Step 1, identify a problem of major importance to the chosen community/organization in the future. Write your Underlying Problem making sure your question clearly explains the action that will be taken and the desired results/goal of that action.*

Given that teenagers are growing up in a digital world of constant connectivity powered by the force of big data, it appears that teenagers in 2030 might have their mindset shaped by the use of Big Data in Social media. How might we encourage teenagers to think objectively so that they are able to make well-informed and managed decisions in 2030 and beyond in Singapore?

Incorporating Challenge(s) #1, 2, 3, 4

### STEP 3. Produce Solution Ideas

*Generate solution ideas to the Underlying Problem in Step 2. Choose the 5 most effective solutions and write the elaborated ideas in the space provided. Include applicable research with appropriate in-text citations.*

#### **Solution #1:**

We, Innovative Workshops Singapore, will lobby the Ministry of Education to encourage professionals to conduct workshops for teenagers in schools. These workshops will raise teenagers' awareness about the effects of Big Data in Social media, the dangers of it pertaining to how it can transform our mindsets and attitudes. The workshops also should help teenagers to think differently based on different activities to get them to think out of the box. These workshops should be priced low so that people will want to participate in them. These workshops are targeting teenagers, hence these workshops should be as creative and relevant as possible to 2030 teens. This is to encourage students to think outside the box and to expose teenagers to different viewpoints. This helps to prevent teenagers' mindset to be curated and to be bold enough to be free of social norms. Workshops should also be as interactive as possible as teenagers of 2030 will probably have a short attention span, and this will be able to stimulate their mind as well as train them to use these skills in their daily lives.

RESEARCH: We have found out that workshops do help increase attendees' interest and awareness in a subject, according to a study by the Journal of Extension. There are also pre-existing social media safety workshops in the present, and such workshops do have good feedback from students saying that they have learned a lot from it, according to feedback of the White Hatter. With the advancement in technology in 2030, these workshops can be very interactive, which makes it more attractive for teens to participate in them.

#### **Solution #2:**

We, Objectivity Pedagogy, will recommend to the Ministry of Education to restructure the education system to focus more on creativity and technology. While we do believe that languages are important subjects, in a world where one can easily translate or learn new languages on the internet, we feel that teaching about technology is even more important. This subject can not only teach teenagers how to program but to also be aware of the technology behind social media and other software. Next, we also should encourage creative thinking in subjects. Language subjects especially should focus on teaching teens to think and write creatively without following a strict format.

RESEARCH: In Hwa Chong Institution, in Secondary 1 and 2, a lesson known as Thinking Programme, that lasts for 1 hour per week, is mandatory as part of the lower secondary curriculum. This lesson broadens student's solutions and poses thought provoking questions for them to ponder about. These lessons allow students to explore different perspectives and think out of the box to discover premises and conclusions. Many answers to these questions are ambiguous and require critical thinking, which allows students to think for themselves and come up with their own interpretation concerning their perception and definition of correct and wrong; agreeing and disagreeing.

### **Solution #3:**

We, StimulaSuit Singapore, will design a suit that will provide an immersive experience for users. This suit will be suitable for children of all ages, particularly children of pre-school and primary school, as their mind is the most susceptible to influences in their early childhood years. Parents can send their children for a weekly session of mind stimulation, which will enhance their critical thinking and expose them to various perspectives that may or may not be well-received by the society. They will put on the suit, which puts them through real-life situations, where they have to make decisions independently. These decisions result in ambiguous outcomes, which will train them to think critically, without freedom or restrictions from society. The weekly exposure to these real-life situations will train them to think objectively. With their objectivity trained from young, they will be better able to discern and not be entirely influenced by social media, to take the information on social media platforms with a pinch of salt. Being able to regularly chew on insightful situations will also stimulate the brain to make decisions based on one's perspective instead of being convinced and making a decision against one's viewpoint in a moment of rash.

RESEARCH: Currently, a company named Teslasuit has designed a full body haptic suit for physical VR experiences. Described by its developers as "a two-way interface between human body and digital world", the suit is at the cutting edge of wearable technology. With a haptic feedback system, motion capture and positioning sensors, biometric feedback and multiplayer capabilities, it can accelerate VR training and provide richer, more personalised simulations with improved realism. In 2030, potential breakthroughs in designing such immersive yet not intrusive experiences using technology, in large scale, at an affordable price, will be able to become a reality.

#### **Solution #4:**

We, Panel of Counsellors, will create an online portal where professional counsellors can provide people with advice and counselling both through text or through face to face video calls. This way, questions and inquiries that people may have regarding social media will be answered. Through the professional counselling, the teenagers on the internet would have a wider horizon and a more open mind, thus having the objectivity not to conform to social norms. They would have the discernment pertaining to social matters and would be able to judge independently. In addition, counsellors will be able to assist people in overcoming psychological obstacles that they may face such as the lack of courage to try new things due to past unpleasant experiences and fears that they may still hold on to. In a nutshell, our portal would provide safe space that encourages teenagers to be objective in both online and in real life interactions with others.

RESEARCH: According to a Channel News Asia article published in 2017 titled “Medical apps providing virtual consultations, e-MCs on the rise”, nowadays, medical consultations can take place through video consultations. In the fast-paced lifestyle of 2030, virtual consultations will certainly gain more traction and popularity as it allows for more convenience and saves the travel time. As Singapore is moving towards a vision of a smart nation, in many occasions where physical examination and therapy is unnecessary, counsellors can advise and help teenagers in having a more objective mindset concerning social media virtually through our portal. Our portal can not only increase productivity, it can also allow for more flexibility for both counsellors as well as teenagers. Thus, our solution is definitely plausible in the near future.

#### **Solution #5**

We, One Click Away, will create a video game which revolves around social media. The different challenges that the player will face in the game will all be related to all of the different types of problems that exist in real social media. Players would have to find ways to resolve their problems and manage their emotions in social media platforms. Through the game, players will understand how to cope with similar situations in the event it occurs in real life. The experience as a whole would raise the users’ awareness and train players to think ahead and of the repercussions before acting. The game is also a safe space where teenagers will be able to make mistakes and improve without trauma which will be inflicted upon them in real life. The game would subtly change the users mindsets and allow them to understand how to think independently and practice critical thinking in each of their choices on social media as they can harbour adverse consequences.

RESEARCH: According to research done by Frontiers in Science Daily, playing video games can change the brain regions responsible for attention and visuospatial skills and make them more efficient. Research suggests that playing video games can change the brain regions

responsible for attention and visuospatial skills and make them more efficient. This also tells us that with video games more teenagers would be able to react to these situations much more effectively. In turn, they would be able to apply their mindset developed through the game to real life. Teenagers will be able to think more rationally on social media through critical thinking reiterated through decision-making within the game and the game would thus impart objectivity.

#### STEP 4a. Select Criteria

*Generate criteria to determine which solution idea does the best job of solving your Underlying Problem and/or addressing the Future Scene situation. Select the 5 most important criteria for measuring solution ideas and write them in the spaces provided.*

Cost Effectiveness: Which solution will be the cheapest for the government so that the government would be able to spend the least money?

Effort: Which solution will take the least effort to implement by the government so that it would be more convenient and quicker to implement?

Long Term Effectiveness: Which solution would have longest lasting effects on teenagers and would train them to think objectively even until the distant future?

Short Term Effectiveness: Which solution would have the most immediate effects on teenagers so that this problem can be solved quickly?

Public Receptiveness: Which solution would be most well received by the public so that the public will be able to understand and cooperate with the government to solve this problem?

STEP 4b. Apply Criteria

*List the solution ideas from Step 3 on the grid. Use each criterion to rank the solutions on a scale from 1 (poorest) to 5 (best). The weighting for one important criterion may be doubled if necessary.*

<b>Solution</b>	<b>Solution Idea</b>	Cost Effectiveness (1)	Effort (2)	Long Term effectiveness (5)	Short Term Effectiveness (3)	Public Receptiveness (4)	Total
#1	Workshop	4	8	15	9	12	48
#2	Education system	2	2	25	3	20	52
#3	Suit	1	4	5	15	4	29
#4	Counselling	5	10	20	6	8	49
#5	Video Game	3	6	10	12	16	47

## STEP 5. Develop an Action Plan and Evaluate its Feasibility

*Develop your top-scoring solution idea into an Action Plan. Thoroughly explain how the Underlying Problem is solved, how the plan will be implemented, and how the community/organization will be affected. Explain how this Action Plan is feasible with secondary research consulted, preferably also with primary research (feedback from chosen community/organization)*

Through the grid we can conclude that the most effective solution amongst the listed solutions would be to reform the education system. In many of the criterias, it had scored the highest and as a whole would be more effective dealing with our underlying problem.

We, Objectivity Pedagogy, will recommend to the Ministry of Education to reform the education system to focus more on creativity and technology. School lessons should implement the use of technology and creativity to encourage teenagers to think objectively. The subject of Infocomm should not only teach teenagers how to program but to also be aware of the technology behind social media and other softwares and hardwares. Moreover, we should encourage creative thinking in subjects. Language subjects should focus more on teaching teens how to think and write creatively without following a strict format, freedom of exploring diverse ideas, topics and styles should be encouraged instead of restricting students in their writing in pursuit of good grades. When students have the liberty to discuss and write about diverse topics of their mind, it allows students to have a more open mind when it comes to the embracing of differing ideologies that they may not agree with, with that also comes discernment and objectivity in their behaviour both online and offline.

### **Implementation schedule**

2025 -- We will conduct workshops to train teachers to teach objectivity and creativity in students. These workshops will be mandatory to participate in. Throughout the 5 years from 2025 to 2030, batches of teachers from different secondary schools, junior colleges and polytechnics will be sent to participate in these workshops each month.

2026 -- We will implement our Holistic Weightage Scheme, which is to increase the weightage of holistic development subjects (e.g Project Work, which fosters communication skills; Physical Education, which builds up students' fitness etc.) and decrease the weightage of academic subjects in secondary schools, junior colleges and polytechnics.

2027 -- We will collect feedback and fine tune our Holistic Weightage Scheme.

2028 -- We will implement our Timetable Scheme which allocates more time for non-academic

subjects (E.g Art, Music, Infocomm) as part of the mandatory curriculum in secondary schools, junior colleges and polytechnics since these subjects are very important for students for the holistic development of students.

2029 -- We will solicit feedback and fine tune our Timetable Scheme.

### **Potential challenges we may encounter**

Problem: Potential backlash from traditionalists who focus on academics instead of other aspects.

Counter solution: Convince parents and teachers that the future is about creativity and emphasis on academics is not going to prepare one for the future. In the future, human creativity and innovation is the one that will set us apart from robots.

Problem: Difficult to implement as it takes much effort to restructure the education system

Counter solution: Implement step-by-step and fine tune schemes along the way. Little by little, schools will veer from emphasis on academic grades to placing more importance on creative and critical thinking.

### **Community Investigation (Primary Research):**

To ascertain the feasibility of our Action Plan, we sent out a survey describing the Action Plan to teenagers aged 13 to 20 and solicited their feedback. Based on our Action Plan survey of 56 responses, 85.7% of respondents agreed with our Action Plan, thus evidently showing that our Action Plan is feasible, realistic, well-received and has high hopes that it could be fulfilled by the year 2030.

### **Case Study (Secondary Research):**

In 2019, it was announced that from 2021 onwards PSLE will be scored with wider bands and that it would reflect a student's individual performance, not his performance relative to his peers. This change was made due to the education system's new focus of bringing back the joy of learning, in an attempt to reduce the competitiveness amongst students. This shows that Singapore's education system is already taking steps to head in a direction of placing less emphasis on academic grades and more importance on the inculcating of values and the fostering of a more innovative, creative and critical mindset. This shows that education reformation will be very much feasible in the year 2030.

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*Cite the resources you consulted using the APA format.*

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