Future Trends Project Report

Based on the analysis of how social media will affect the free will of youths.

Group ID: 10-07

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Project Title: Technology: Friend or Foe?

With the increasing popularity of social media use among students, we are concerned about the potential impact of social media on students. How would Echo Chambers, Fake news, Fear of Missing Out, so called "trends" that are potentially harmful to students and Hive Mindset unconsciously assimilate, curtail and manipulate their free will and opinion?

Challenge 1:
Fear Of Missing Out

Based on our research on how social media will potentially affect youths, we have found out that the Fear of Missing Out among students using social media has been growing significantly. Social media is a platform which allows students to take and share pictures of themselves and their friends, having fun and enjoying the best of their lives. Their peers can also view these pictures on social media and see what their friends are doing. Social media is also a platform for people to share popular trends, and that is gaining popularity among students as well.

While social media is seen as a fun and exciting platform for students, some have neglected the potential harmful effects of social media. Social media projects unrealistic or even completely over-idealised impressions to youths, consequencing in their adopting a distorted perspective of reality. For example, some students may feel that they are missing out on the seemingly fun and enjoyable lives that their friends have portrayed themselves on social media. However, many of them do not know that these posts of their friends' lives are curated. This leads to them aspiring for the "perfect life". This frequently leads to the triggering of negative emotions. In addition, the "perfect life" according to social media posts is usually "fake" and unattainable. If youths try to attain an impossible goal, they will obviously fail and be overwhelmed by negative emotions. These students may feel left out, or disappointed that they cannot live the seemingly "perfect" lives of others. Over time, these negative emotions will impact upon the students' mental health. As such, social media, in our opinion, disinclines our young from an accurate perception of the world around them.

Fear of Missing Out can also influence students' decisions, resulting in their purchasing of unnecessary things and overly-frequent use of electronic devices. They may be inclined to follow their friends' actions on social media instead of rationalizing before carrying out actions, in order to be seen as the "cool" or "popular" kid, to not feel left out from the current "trends". They may also be inclined to post pictures of themselves on social media to appear "cool" or a "hypebeast" in contemporary terms. The fear of being left out can also lead to students constantly using their phones and checking their social media feed for any new updates. This tends to lead to addiction of using phones and social media, which is unhealthy for them. Thus, it is obvious , from the above, that the Fear Of Missing Out leads to students being influenced, hence, in this sense, losing their free will.

According to research, intense feelings of one "missing out" can push the young into making counterproductive or mistaken purchases of items; an individual could choose to buy a better or more expensive product than their friend's because they do not want to miss out on the possibility of having something better or missing out on an opportunity to "fit in." In situations like this, people may change what they typically do or purchase because of social pressures and due to the fear of being excluded (Dykman, 2012). Now that any individual has the ability to see other's updates on their lives in real time, social media and technology enable consumers to have constant access to what they are missing out on (i.e., a party, a dinner, a new career, or other opportunity). Being constantly connected to social media and always being able to view the things they are missing out on can cause individuals to begin to experience feelings of dissatisfaction, anxiety, and unworthiness (Miller, 2012).

Our primary research on 51 students from Hwa Chong Institution have revealed that more than half of our respondents have claimed that they have made comparisons between themselves and others' social media posts.

Challenge 2:

Echo Chambers

Based on our research, we have also found that social media has been promoting echo chambers through the use of complex algorithms which only displays users with personalised news and information that aligns with their own opinions and beliefs. From research, examinations of selective exposure have also shown that individuals do tend to expose themselves to information and ideas they agree with more often" (Iyengar & Hahn, 2009; Lawrence, Sides, & Farrell, 2010). This, with the algorithms of social media, delivering information that aligns with the youths beliefs, may foster youths who are inclined to information that aligns with themselves, hence strengthening that belief. However, the information delivered can be untrue or are sometimes plainly intended to spread falsehoods, yet, the belief of these unreliable information is strengthened by the repeated exposure to similar supportive information. This is a phenomenon of "self-brainwashing"; when people read information that conforms to oneself's beliefs repeatedly, they will be less likely to agree with information that contradicts with what they believe in.

Due to youth's impressionability, the chances of youths being trapped in echo chambers are much higher, as youths rely heavily on social media for information and news. Social Media algorithms encourage this by recommending and curating preferred content for the users in order to attract youths into continuing the use of their platforms, so that they can profit much more. Echo Chambers are basically online forums where the same idea is repeatedly stated, leading the members of the forum to believe more and more in the theory propagated by the forum members. An example is the flat earth and anti-vaxxer movements. Some of the echo

chambers, like the examples above, promote fringe conspiracy theories that are unfounded and fake. The youths are constantly being "brainwashed" in the echo chamber due to the large amount of so called legitimate "information" supporting such theories. As only one viewpoint/opinion prevails, this causes them to become intransigent. Youths may also read these information fed to them without a critical eye, resulting in strengthening some of the youth's beliefs, some of which may be potentially wrong or harmful, such as the anti-vaccination disinformation. Eventually, they come to believe and propagate such theories, leading to a vicious cycle of "self-brainwashing". This is another impact of social media and how its manipulative algorithms affect people's judgement.

Challenge 3:
Fake News

As fake news is proliferating in social media, the young may be more exposed to fake news due to their relatively higher usage of it. Moreover, youths tend to lack the ability to differentiate better between what is real and fake, thereby making them much more susceptible to believing it. In fact, fake online news sources nowadays closely mimic "real" news such that it becomes challenging even for experienced adults to distinguish between real news and fake news.

As shown in our survey, most youths are not able to provide definitive fact-checking websites. However, many of them feel that they are confident in their fact checking ability. Not only will this lead them to believe in fake news, they will also potentially share fake news, thinking that it is real. Also, we believe that youths may have less experience in evaluating news sources, so certain words or images that might immediately tell an adult that something is fake or biased might instead appear to be more convincing or believable for youth .

A recent report concluded that students may be among the most susceptible to the influx of false statements and the manipulation of facts. In a 2016 study by the Stanford History Education Group (SHEG), researchers found that youth have a hard time telling the difference between objective and sponsored online content. Youths are likely to also spread fake news without verifying the news source. According to another survey carried out by a group of Diploma in Consumer Behaviour and Research students from Republic Polytechnic (RP), out of 10 times, about 67 per cent of those surveyed share news one to five times without verifying the facts. This reflects the wide extent to which fake news is spread. Young people are also susceptible to bias."Many people assume that because young people are fluent in social media they are equally perceptive about what they find there," said Professor Sam Wineburg, author of the report and founder of SHEG. "Our work shows the opposite to be

true." Hence, one of the potential digital problems facing teenagers in 2030 is the spread of fake news.

Challenge 4:
Detrimental Trends/Challenges

With the rise of Social Media, a virtual market now exists where attention in the form of "likes," "views," and "followers" is traded for monetary and psychological benefit. In this trade, physically risky behaviors have arisen to become the new attraction for attention, leading to numerous "trends" that encourage the same risk-taking behavior. Such trends, even those with a positive goal, have simultaneously led to injuries and fatalities, which highlights the necessity of a proactive approach to curtail the same. (Gupta, A., & Dhingra, A. 2018) Technology may expedite the spread of "trends" detrimental to youth's health. With contemporary trends spreading widely on social media, youths many times may follow these trends to "keep up" with perceived fashion or fad. Some trends may consist of having people partake in potentially harmful challenges with significant physical and mental harm as a consequence. Youths often see these trending challenges to be merely fun and harmless activities, often overlooking the potential dangers of these activities due to seeing their friends doing it and not wanting to miss out. They might also fall under peer pressure when their friends encourage them to participate in those "trendy" activities. Being carried away by the excitement of these activities, they might also turn a blind eye to the potential dangers, assuming that accidents would not happen as long as they are careful enough.

A prime example of this is the trend of eating laundry detergent capsules, colloquially known as the "tide-pod" challenge. Among adolescents and older populations, the American Association of Poison Control Centres (AAPCC) reported 39 and 53 cases of intentional exposures (in the years 2016 and 2017, respectively). Within the first 15 days of 2018, AAPCC reported 39 such cases among the age group between 3-19, where 91% were deliberate oral ingestions, coinciding with a rise in internet-based videos showing intentional consumption of laundry detergent capsules. These detergent capsules contain highly concentrated, toxic detergent chemicals that are harmful for the human body.

Although youths could recognize that ingesting these laundry detergent capsules would be harmful, filming and showing off this wild act on social media helps create attention. This attraction translated into "views" and "likes", fulfilling the psychological desire in the youth for greater attention. Yet, these harmful challenges are often harmful, or even ultimately fatal.

Challenge 5:
Limited/Partisan worldview

In this technologically advanced age, Social Media companies avail of Artificial Intelligence (AI) and algorithms etc. expansively, especially to curate users' feed to their liking. However, this causes some problems on several fronts, with a few being mentioned earlier (Echo Chambers, Fake news and the like).

Social media's utilization of these technologies would grant popular beliefs and opinions even more influence as they constantly scan cyberspace and recommend "trendy" content for users. As such, many people, especially youths, would have access to these ideas promulgated. Youths, tender in age, are often callow and thus they would be likely to adopt these beliefs, opinions, ideas etc. without being too discriminating. This is especially due to something called the Hive mindset, where people conform to a larger crowd to not feel outcast. Youths are rather impressionable, and look out for the number of "likes, shares, replies", evidence of the posts' approval ratings. If the content is well-received, youths may be likely to espouse these world views as theirs. This can cause several problems. Firstly, it will cause youths to become sequacious. They become "intellectually servile" to the common opinion. And with this, they lose their ability to think for themselves, which leads to de-individualisation, the loss of identity, usually in a group setting. Also, youths beliefs' would become easy to manipulate. For example, if hate speech becomes widely-accepted, it may antagonise the youths and arouse animosity. Secondly, it may beget echo chambers if the same common opinion is reproduced widely. This can cause youths to become insular, and prejudiced in their world view.

Social media has become a pool of comments, thoughts and opinions of people from all corners of the earth. Ideas and posts can be shared easily with a simple click of a button. This results in the emergence of the Hive mind. Youths share information and opinions often with each other. In their groups, without the lack of critical thinking and with the willingness to conform to widely accepted opinion, youths may adopt a Hive mindset, that is agreeing with opinion that is widely accepted, and losing their sense of individuality. This hinders the youths in developing their own personalities and opinions when their thoughts are constantly influenced by what they see online and what is shared among their friends. Youths should develop their own opinions and worldview without being bombarded by opinion that is widely accepted on social media, and be able to determine for themselves what is right and what is wrong. However, social media hives are destroying youth's individuality, killing the chance for youth to develop their own views and opinions.

Underlying problem:

Given that various sectors of Internet, mainly online information resources and social media, are slowly becoming an integral part of youths' lives, how might we ensure that youths in Singapore exercise their critical thinking and not blindly conform to apparently convincing information, propounded from perspectives which are based merely upon mainstream assumptions, so as to retain autonomous and critical faculties and identity, as well as to prevent their free will and opinion from being unconsciously assimilated, curtailed, manipulated, especially in 2030?

Solution 1:

We, of the media literacy council, will propose to Facebook, Reddit and other social media companies to use Artificial Intelligence which are calibrated to reflect and respect the respective norms and values of the societies concerned, without infringing on the rights of freedom of expression, but also not to transgress into areas involving racism, discriminatory expressions and the like to vigilantly monitor social media sites and by scanning past data, the artificial intelligence bots can identify potential harmful Echo Chambers, biased information and disinformation, by corroborating it with common characteristics and patterns of such information. Should the bot identify such incidences, it will send a message to the users they are reading or spreading false and harmful content and will warn them to stop doing so. The harmful and unreliable information can also be flagged and reported to social media companies. If the propagators of that type of information continue to do so, the bot may remove those members and ban them. These artificial intelligence bots and computers are able to scan large amounts of data faster than any human. This makes them suitable for "patrolling" social media as large amounts of data are being uploaded to social media every second. Bots can also promote alternative content and viewpoints. They will also warn users not to participate in dangerous trends that youths might foolishly follow such as the "tide pod" challenge through site-wide messages. These bots can also generate questions for users to answer when youths read the information in order to trigger their critical thinking.These intelligent computers also seek to identify the latest trends and risks. This lets the organization capture important insights from online communities, via Artificial Intelligent algorithms that are incorporated in social media monitoring tools. This is so as to improve the efficiency of the tools. (Mastorakis, et al., 2019) Such a tool helps to ensure that any online mention is analyzed and classified as a positive or negative comment. (Perakakis, Mastorakis, & Kopanakis, 2019) What we propose is an innovative intelligent system that would analyze this data and draw useful conclusions. (Perakakis, Mastorakis, & Kopanakis, 2019). A similar example of the use of artificial intelligence to scan and filter out content on social media is

the IBM Watson Tone analyzer that can detect what the content intends as well as what it specifically says, which is important for sites trying to balance freedom of speech with protection of users and removal of illegal or harmful content. The artificial intelligence bots can also be used in a similar way to spot potentially harmful echo chambers, biased information and disinformation, and also banish propagators of faulty information from the social media platform.

Solution 2:

We, of the educational ministry, will institute a new "future-ready" curriculum. It will entail changing the education system for youths to include media literacy and learning how to identify fake news. In addition, a guided and interactive journey through "social media" will be staged with the use of virtual reality. Potential dangers like echo chambers and fake news will be shown to the students. Based on whether the students are able to identify and resist such dangers, an artificial intelligence bot will customise further training. Students will be able to learn at their own pace. Critical thinking will be introduced in the curriculum of all schools, starting from primary schools. Coupled with online "training", students will be able to resist echo chambers. They will also be able to properly analyse mainstream trends and not be easily influenced. High-quality education and having more and more educated people is a prerequisite for tackling the negative effects of fake news and post-truth," the Media Literacy Index's authors wrote. "While some regulation is necessary, education seems to be the best all-round solution." "We need to train a new generation of critical minds," Jean-Pierre Bourguignon, President of the European Research Council told the World Economic Forum's Annual Meeting of the New Champions in September. "We must tackle this issue through improved news literacy, and it is the task of our educators and society at large to teach children how to use doubt intelligently and to understand that uncertainty can be quantified and measured." According to the OST report, "studies show a positive relationship between the level of education and resilience to fake new with more knowledge and better critical-thinking skills guarding against fabricated information." Finland, Sweden and the Netherlands are among countries that teach digital literacy and critical thinking about misinformation to school children. (Charlton, 2019)

Solution 3:

We, of the government, will propose a regional security standard. This will regulate social media sites around the region and protect users from echo chambers, fake news and the like. They must make sure news spread are validated and must not apply over-extensive use of algorithms to curate content for users to prevent users from becoming biased. We will set up a regional cybersecurity watchdog in tandem with the regional security standard, managed by ASEAN or other organisations. Social media companies will be required to have the watchdog monitor its operations, from algorithms in use to user protection policies. Should the social media companies transgress the laws of the regional security standard, they will face sanctions. In addition, we will also set up a national fact-checking website run by AI. The AI will check potentially fake news against more credible and unbiased news sources, for example. government sites and reputable think-tanks. They will scan the web and verify news constantly, and alert users about fake news floating in cyberspace. This website will constantly verify fake news.

Solution 4:

We, of the national digital watchdog, will constantly search for and monitor the current digital situation.We will also be able to spot fake news and warn others. We will use advanced artificial intelligence to scan the internet, and will only get humans to check suspicious content. The Artificial Intelligence system can utilize machine learning to analyse potential patterns in dangerous challenges that are being spread among youths, and forestall the spread of these "trends" before it becomes dangerous.
 If there are any detrimental trends circulating throughout the internet, we will be able to notify the relevant government agencies. For example, if a dangerous challenge like the "Tide Pod Challenge" is criculating, we will be able to inform the education ministry, which would then disseminate this information to teachers, who will be able to warn the students against this.

Solution 5:

We of the media literacy companies, will expand our digital literacy teaching content to cover a wide range of topics. When schools invite us to speak, we will include current news about the dangers of fake news and Echo Chambers. We will also share solutions to manage online dangers, and host simple activities to promote critical thinking. In addition, since the online threats will be relatable to teenagers, there will be more projects that we are likely to receive. We will also try to combine online technology into our teachings such as through virtual games and courses. In addition,we will also keep our teachings updated, due to the ever changing nature of the internet. "High-quality education and having more and more educated people is a prerequisite for tackling the negative effects of fake news and post-truth," the Media Literacy Index's authors wrote. "While some regulation is necessary, education seems to be the best all-round solution." "We need to train a new generation of critical minds," Jean-Pierre Bourguignon, President of the European Research Council told the World Economic Forum's Annual Meeting of the New Champions in September. "We must tackle this issue through improved news literacy, and it is the task of our educators and society at large to teach children how to use doubt intelligently and to understand that uncertainty can be quantified and measured." Studies show a positive relationship between the level of education and resilience to fake news, the OSI report said. With more knowledge and better critical-thinking skills guarding against fabricated information. Finland, Sweden and the Netherlands are among countries that teach digital literacy and critical thinking about misinformation to school children. (Charlton, 2019)

Criteria for solutions:

1. Which solution will be the most effective in solving the underlying problem?
2. Which solution will be the most feasible in helping youths retain autonomous and critical faculties and identity so that their free will would not be unconsciously assimilated, curtailed, manipulated?
3. Which solution will expend the least manpower so that the solution can be carried out efficiently?
4. Which solution will be the most innovative so that it makes use of technology to solve the underlying problem?
5. Which solution will be the least costly so that it is easier to be implemented?

Decision matrix:

Criteria:	Effectiveness	Innovativeness	Required manpower	Feasibility	Cost	
Weightage	5	2	3	4	1	Total
Solution 1	4 (20)	5 (10)	2 (6)	3 (12)	1 (1)	49
Solution 2	4 (20)	3 (6)	1 (3)	5 (20)	2 (2)	51
Solution 3	2 (10)	1 (2)	4 (12)	3 (12)	5 (5)	41
Solution 4	1 (5)	2 (4)	3 (9)	4 (16)	5 (5)	39
Solution 5	3 (15)	2 (4)	1 (3)	5 (20)	4 (4)	46

*Solutions are judged according to their extent of meeting the criteria.

**Some numbers for different solutions are equal because we felt the difference between the two was negligible

Best Solution: Solution 2

Action plan:

We decided that our underlying problem needed a multi pronged solution to be overcomed, thus we decided to combine solutions 1 and 2 together. We decided to incorporate some futuristic elements to it.

Firstly, we plan to add a new curriculum that caters to the students' digital needs. The curriculum will have lessons that teach teens how to think critically, so as to prevent them from being easily affected by problems listed beforehand. In addition, the students will also be taught on how to recognise fake news and not spread it.

Secondly, a virtual course created by MOE and external vendors will also be sent to the students. Students will learn how to protect themselves from fake news, echo chambers and FOMO. This course will use "smart" algorithms to adjust the curriculum according to each student's needs based on his/her participation, resulting in a personalised course that will be more effective. The course will also use strategies such as gamification to ensure a higher receptiveness from students.

The third part of our action plan will be about the Government mandating social media companies to start using artificial intelligence bots to scan online information, flag harmful echo chambers and disinformation. The bot can also ban potentially dangerous trends circulating on the internet.

We plan to instate the new curriculum by the 1st year, then start the adjustment of curriculum to be personalised for each student's needs by the 2nd year, and lastly, for the government to mandate social media companies to start using AI bots by the 5th year.

A potential problem of our action plan is that students may not find the curriculum interesting enough and will therefore resent it. We will counter this by adding gamification to the curriculum so as to make it enjoyable for the students which will make them more receptive toward it. After acquiring feedback from KingMaker, our action plan is conceptually creative and sound. However, this action plan requires work and expertise. Research has shown that education and critical thinking is effective in combating fake news. Artificial intelligence can be used on social media to filter out baleful contents. It can also help to make the trawling process much more efficient as millions of information bytes can be scanned in a short amount of time. To

increase the efficiency of carrying out the action plan, we could involve both private and public sectors to increase expertise, and combine groups that have worked on different segments of our action plan into one cohesive whole for more effectiveness.

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