

How the Internet Impacts Critical Thinking:

What We Can Do About It

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Abstract

Making smart choices on the World Wide Web is far more difficult than it first seems. Our news feeds and social media websites are riddled with opportunities for misleading information. While this may seem like a simple inconvenience, it is actually far more sinister. This misinformation is often created and shared intentionally to alter public opinion for another party's benefit. This paper reviews books by Nichols and Daniel J. Levitin and also references data taken by the Pew Research Center, to explore the impact this era of easily accessible information has had on our ability to think critically. This paper also delves into the importance of metacognition in education. It concludes that the methodical teaching of future generations how to think critically about the validity of their information will lead to higher-level critical thinking through the internet, rather than allowing misuse of this technological resource to detract from deeper understanding of the world around us.

Keywords: Critical Thinking, misinformation, metacognition

Changing Technology Environment

Society has changed significantly in the past several decades. Perhaps even more so in the past ten years due to increased access to the information highway available to us via computers and smart devices. Almost everywhere in the developed world people carry tiny computers with them that have the ability to do a vast multitude of tasks such as act as a calculator, play music, take photographs, control online banking, and act as a GPS system. What it doesn't allow for, is aiding people to think for themselves. Authors such as Tom Nichols (2017) write about unchecked levels of human ignorance due to the current boom in technology . The unchecked inclusion of technology in the hands of people often leads to lapses in judgement, the inability to think critically, and online egos taking precedence over actual, credible information. This inability to practice metacognition to combat this, reflects the misuse of a valuable resource. We should embrace and emphasize the use of the internet as a tool to develop stronger critical thinking skills and push those skills to the forefront of our education system. The culture of misinformation is vast and people need certain critical thinking skills to be successful and not end up a victim. Thinking critically means to question what you are viewing. Not in a skeptic fashion, but rather with the willingness to not believe what you are viewing simply because it aligns with what you want it to be.

Technology Use on the Rise

It is no lie that technology has infiltrated just about every part of our lives, especially for younger generations who have never known anything different. When something comes as natural as technology does to today's teenagers, do we really want to suppress it? We need to learn how to embrace information technology, and at the same time, teach younger generations how to effectively make use of its power. Pew Research Center reports that up to 24% of teens

go online “almost constantly,” facilitated by the widespread availability of smartphones, (Lenhart, 2015). Though it may seem dramatic, this is not necessarily a startling statistic - this is now widely accepted as the level of technology use among teens. The Pew Research Center also describes teens as “aided by the convenience and constant access provided by mobile devices, especially smartphones, 92% of teens report going online daily — including 24% who say they go online “almost constantly,” (Lenhart, 2015). Again, this should not be surprising to those working with today’s teens. Young people (and adults as well) are wrapped up in internet accessibility, social media apps, and games that are played through an internet connection.

Children of all age groups inhabit a world that seamlessly flows between on and offline. People born after the year 2000 have been born into the web 2.0 era, a term made popular by Tim O’Reilly and Dale Dougherty (Dougherty & O’Reilly, 2005). The issue that I am addressing in this paper is the massive inclusion of technology in everyday life, and how that impacts what people are choosing to believe - only searching for facts based on their already held opinions rather than seeking out truly new information. When someone creates a Facebook profile, they subscribe to news, politicians, and movies based upon their interests. It is a fair chance a fan of Bernie Sanders is not going to follow Donald Trump (though I am sure there are a few), but the point is people surround themselves with the content they feel most comfortable with, and that allows them to never see different perspectives. As educators, it’s our job to teach students how to combat this intentional misinformation which will foster their ability to think critically about the information so readily available to them.

What is Thinking Critically All About?

What does the rise of personal technology and internet access mean for critical thinking? Thinking critically involves thinking beyond the ordinary (Greengard, 2009). Critical thinking encourages the ability to think outside the box; the ability to ask and answer questions logically without letting personal opinion take hold. Oregon Columnist Samuel Greengard proposes, “we need to develop our abilities to think more clearly, richly, and fully” (2009, p. 18). This is not limited to the individual either. We need to think as a collective whole, which is crucial to solving problems.

Critical thinking is “that mode of thinking – about any subject – in which the thinker improves the quality of his or her thinking by skillfully taking charge and imposing intellectual standards upon them (Paul & Elder, 2004, p. 1). Essentially, critical thinking is the ability to problem solve. The only way we are going to solve the problems of the future is if we integrate problem solving skills and how to apply those skills to real world problems into the American education system. Someone who is well educated and versed in critical thinking methods would be able to raise vital questions and problems (The Foundation for Critical Thinking, 2017). Being able to generate proactive questions is the first step, and to be able to gather and assess relevant information while using abstract ideas to interpret it effectively, and come to well-reasoned conclusions and solutions is the next step (The Foundation for Critical Thinking, 2017). Incorporating critical thinking into modern education is vital to developing well-rounded people who are receptive to different perspectives rather than mindlessly following what they perceive as “right.”

Ignorance is Bliss

Authors Philip Fernbach and Stephen Sloman (2017) write in *The Knowledge Illusion* “for humans, ignorance is inevitable: it’s our natural state. There is too much complexity in the world for any individual to master,” (256). The age old saying “ignorance is bliss” is very applicable to this situation. Nichols writes that with more sources of news, thanks to radio, television, and the internet, people can access these sources quickly and share content almost immediately (2017). While this increased access to a plethora of information from different sources may seem like a step forward, the issue that here is the unseen ignorance levels reinforced by the lack of any actual skill to really do anything to gain this knowledge. The probability that any real learning occurs while comprehending much of this information can be really low. “Experts are evenly split on whether the coming decade will see a reduction in false and misleading narratives online... Others think the dark side of human nature is aided more than stifled by technology,” (Anderson and Rainie, 2017). While many people searching the internet for answers probably have honest intentions, we can easily be blinded by our own experiences and prejudices without ever realizing it (Stephens-Davidowitz, 2017).

It’s all too easy to believe what we want. In general, people do not want their truths challenged, especially not something that consumes so much of our lives as such as spending time online. Confirmation bias “occurs from the direct influence of desire on beliefs. When people would like a certain idea/concept to be true, they end up believing it to be true,” (Heshmat, 2015). They are motivated by wishful thinking. This error leads the individual to stop gathering information when the evidence gathered so far confirms the views (prejudices) one would like to be true. According to Fernbach and Sloman:

Put simply, people tend to do what they know and fail to do that which they have no conception of. In that way, ignorance profoundly channels the course we take in life People fail to reach their potential as professionals, lovers, parents, and people simply because they are not aware of the possible, (2017, p.45)

Daniel J. Levitin's *Weaponized Lies* addresses not accepting a claim at face value (2016). Blindly trusting news information (or any information) before checking on the author, the date it was published, and if it comes from a credible source, can lead to believing false information which can have dangerous and lasting consequences. Levitin furthers this discussion by arguing that just because an "expert" makes a claim, does not necessarily mean this claim is accurate or trustworthy. False claims happen all the time on the internet, anyone can post that they are an expert without any qualifications. An author on a politically motivated website may have "an expert" weigh in on a situation but provide no qualifications or information on the expert's background. Sometimes our gut, when not guided by careful computer analysis, can be dead wrong (Stephens –Davidowitz, 2017, p. 31).

The World Wide Web can be a wild place. Content can be created by anyone, at any time, and there are few checks and balances in place to help ensure the information published online is even true. "Since there is no quality control for information published on the internet, it becomes our responsibility, as individuals, to judge what is right, wrong, immoral, illegal, biased or totally incorrect," (Anderson & Rainie, 2017, p. 1). It does not matter how complex the subject is. "We tolerate complexity by failing to recognize it," (Sloman & Fernbach, 2017, p. 35). It is so much easier to act oblivious and perhaps pretend we understand what is going on. If a topic online is too complex for us to grasp, we can fall into simple confirmation bias to get through attempting to learn it.

As Anderson and Rainie observe, “humans’ primal quest for success and power – their ‘survival’ instinct – will continue to degrade the online information environment in the next decade,” (Anderson & Rainie, 2017, p. 2) It comes back to confirmation bias and believing having access to seemingly unlimited online content that allows people to feel smarter than they really are. It’s predicted that manipulative actors will use new digital tools to take advantage of humans’ inbred preference for comfort and convenience and their craving for the answers they find in reinforcing echo chambers, (Anderson and Rainie, 2017). People searching online hunt for the answer to their questions. Sloman and Fernbach sum our preference for ignorance and confirming our biases accurately:

We typically don’t know enough individually to form knowledgeable, nuanced views about new technologies and scientific developments. We simply have no choice but to adopt the positions of those we trust. Our attitudes and those of the people around us thus become mutually reinforcing. And the fact that we have a strong opinion makes us think that there must be a firm basis for our opinion, so we think we know a lot, more than in fact we do, (2017, p. 67).

It can be deceivingly challenging to be smart on the internet. As Leah Lievrouw, a professor in the department of information studies, notes, “so many players and interests see online information as uniquely a powerful shaper of individual action and public opinion in ways that serve their economic or political interests, (Lievrouw, 2017). Information online is meant to reach as many people as possible. Business make money by advertisements, and that is driven by clicks and visits.

In our daily lives, we frequently encounter false claims in the form of consumer advertisements, political propaganda, and rumors and repetition may be one way that

insidious misconceptions, such as the belief that vitamin C prevents the common cold, enter our knowledge base. (Fazio, L. K., Brashier, N. M., Payne, B. K., & Marsh, E. J., 2015, p.12)

The internet is rife with a huge variety of organizations - from marketing companies to political parties, from religious groups to scientific communities- with many goals, not all of which are in the consumer's best interest. "These very diverse players would likely oppose (or try to subvert) technological or policy interventions or other attempts to insure the quality, and especially the disinterestedness, of information," (Lievrouw, 2017). Systems that attempt to make the information found on the internet more accurate and honest interfere with groups attempting to push specific agendas or reach targeted audiences. For these entities purposes, the content shared does not need to be accurate, just interesting enough to draw in viewers. As Nichols observes "these are dangerous times. Never have so many people had so much access to so much knowledge and yet have been so resistant to learn anything," (2017, p. 2). We become overwhelmed due to information overload. It happens to everyone, especially people who are less experienced or are not educated as to how to search for reliable content online. A simple Google search of any topic results in thousands of results instantly. It is a massive and overwhelming endeavor to go through and find reliable and accurate unbiased information that will provide you with what you need.

Challenging Experts Opinion

As author Tom Rosenstiel states, "Misinformation is not like a plumbing problem you fix. It is a social condition, like crime, that you must constantly monitor and adjust to" (2017). When people fall victim to confirmation bias, they can completely disengage from reality. This includes disregarding expert opinion and in this case, the internet. With a lack of critical thinking

skills, and maybe a little too much confidence in their own intellectual abilities, this problem becomes much larger when people suffer because of this. Educated people are also prone to challenge expert's opinion. In the Bay area, an area deemed home to the most educated individuals in the US, the anti-vaccination movement, a movement rooted in misinformation, has taken hold and grown in the internet age,(Nichols, 2017, p. 133). There are many recorded instances of when false information spread resulting in negative effects for many people

We have to be aware of what we are searching for and it's easy to believe that everyone has had the same education and can see through "fake news" with ease. If only it were that simple. More media means more competition, more competition means dividing the audience into identifiable political and demographical niches; more opportunity at more outlets means more working journalists, regardless of whether they were competent to cover important issues (Nichols, 2017). This directly impacts our ability to think critically. When information is designed as entertainment rather than facts; money is the ultimate end goal for many of the "informative" websites found online. With an oversaturation in sources, people falling victim to confirmation bias to openly criticize and disagree with experts happens and it is based largely on a lack of education both on the topic of interest and on how to pursue unbiased, accurate information on the internet.

Solution: Relevant Education and Metacognition

Though there are many potential solutions to combating misinformation and confirmation bias on the internet, I am going to focus on one solution that specifically targets the next generation of internet users: education. Introducing metacognition to education is imperative to effectively using technology to support critical thinking. "Metacognition is simply thinking about one's thinking," (Catalfamo, 2014). As technology plays a bigger role in our lives than ever

before, our skills in critical thinking and analysis have declined, while our visual skills have improved (Wolpert, 2009). I believe this problem arises from lack of a certain type of education - not a lack of facts or information, but a lack of critical thinking skills that revolve around metacognition.

A major factor in thinking critically in an educational setting is being aware of what we don't know (Levitin, 2017). No matter how intelligent one is, there is always a wealth of information they won't know. What is critical for future learning, is being able to recognize this lack of knowledge. Unfortunately, this cognizance of our individual lack of understanding is rarely fully recognized. For example, an average person can, with the rare exception, confidently say they know little about rocket science; however, for topics a little less intense, people might assume they know far more than they do which can be dangerous.

In order to better ourselves as users of technology in the coming age, it is vital that we take this concept of thinking deeper about our thought process and adapt it as part of the curriculum of the American school system. The key to combating an age of misinformation and ill informed online feuds lies in pushing this type of education forward for the benefit of today's students. This concept of thinking about thinking, or "metacognitive practices, can help students become aware of their strengths and weaknesses as learners, writers, readers, test-takers, group members, etc." (Mcdaniel, 2018, p. 2) It involves students actually reflecting on their work, including how they arrived at their answers. A key element is recognizing the limit of one's knowledge or ability and then figuring out how to expand that knowledge or extend the ability (Mcdaniel, 2018). Metacognition and educating students to become critical thinkers can be directly applied to viewing content on the internet. We need to teach students to be more aware of what they are viewing. We need to teach students to be prepared to view content that is a part

of their confirmation bias, and be willing to view it as maybe not all genuine and be willing to view information from a different perspective.

Conclusion

Looking again at the Pew Research Center, it can be seen that experts are evenly divided as to whether the next decade will find the misleading narratives plaguing the internet have decreased (Anderson & Rainie, 2017). “Those forecasting improvement place their hopes in technological fixes and in societal solutions. Others think the dark side of human nature is aided more than stifled by technology,” (Anderson & Rainie, 2017). I believe the internet is an incredibly valuable source of information, if we are wise about how we use it, and teach ourselves, as well as future generations, to be mindful and critical of the information we find there. Technology does impact the ability to think critically, but only if the person hasn’t been educated or is not willing to learn from actual evidence. With Nichols, Levitin, and many more authors writing about the perils of not thinking critically while using technology, we have to take this a step further with education. The solution to avoiding an era of misinformation and unnecessary conflict, lies in teaching young people how to successfully navigate through the depths of the World Wide Web’s content, and think critically about their own perceptions, and where their information comes from.

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