

**Exploring the Influence of Critical Thought on Computer Literacy and Citizenship and  
Their Necessity for Being Well-Educated**

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EDST 646: Educational Administration, Policy, Leadership, and Change

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October 9, 2023

## Abstract

The education landscape has long been marked by contentious debates regarding its fundamental principles, such as what content should be taught, who should be the bearers of knowledge, and who holds the authority to dictate the educational agenda. In an age where the internet inundates us with information, discerning what constitutes a high-quality education has grown more complex. This essay provides a brief review of the historical evolution of education. It focuses on critical thinking, citizenship, and pedagogical methodologies within the Ontario Public Secondary School curriculum context. The analysis presented herein illustrates that a robust education demands a well-rounded curriculum, fostering a diverse citizenry capable of steering societal transformation.

*Keywords:* Education, Curriculum, Critical thinking, Citizenship, Ontario Public Secondary School, Education History, Media influence, Responsible citizenship, Educational Quality, Social transformation

## Exploring the Influence of Critical Thought on Computer Literacy and Citizenship and Their Necessity for Being Well-Educated

For decades, education has been a topic of heated debate, with no clear consensus on what should be taught in schools, who should be teaching it, or who should have the final say in what children learn. With a seemingly endless amount of information available online, determining what qualifies as a quality education has become increasingly difficult. Popular media and high-profile politicians suggest that schools are "indoctrinating" (two Today, 2023) students or that they should focus solely on "teaching the basics" (Cullen, 2023). However, these opinions do not accurately represent the viewpoints of educators, students, or education researchers. To combat these external pressures, it is crucial for teachers to foster critical thinking in their students. These skills are essential for producing responsible citizens who can differentiate between truth and falsehood and shape society. This essay will review the history of education and examine the literature on critical thinking, computer literacy, and citizenship. The analysis demonstrates that to be well-educated requires a well-rounded curriculum that creates a diverse citizenry capable of driving social transformation.

### **Traditional vs. Modern Education Models**

It would be challenging to analyze the purpose of education without referencing John Dewey, who argued that "...externally imposed aims [are] responsible for the emphasis put upon the notion of preparation for a remote future and for rendering the work of both teacher and pupil mechanical and slavish" (Dewey, 2019, p. 159). Teachers cannot prepare students to be good citizens with a rigid curriculum limited to reading, writing and math. However, this is the historical format of education in Canada, with schools that "would provide instruction in reading, arithmetic and writing in the early years and grammar, history and geography as the children

matured” (Ungerleider, 2013, p. 18) as basic knowledge to equip students with skills required for earning a living and thereby contributing to the economy (2013, p. 18). The idea that a good education is a means to suitable employment continues through the 20<sup>th</sup> century and into the 21<sup>st</sup> century. However, there are considerably more options both in the types of courses - compulsory or elective – students take and the types of jobs or careers available.

Not everyone agrees with a diverse curriculum; some parents’ groups and politicians advocate for the rigid system limited to the same classes taught over a century ago. The Canadian Anti-Hate Network recently published an article regarding the wave of the “Parental Rights Movement” protests and their ties to right-wing conservative values for example, not discussing sex and gender in the classroom or not teaching evolution (Woodrow, 2023). Nevertheless, as Kohn (2003) points out, this traditional model of merely providing students with “a bunch o’ facts” (Kohn, 2003, p. 26) to be memorized and limiting assessment to test scores to prepare students with job skills may produce a society of workers rather than well-educated people (2003, p. 26). Advocating for what Freire calls the banking style of teaching - whereby the teacher dictates information to students who in turn regurgitate the facts (Freire, 2000, p. 72) - suggests that maintaining the status quo is more beneficial than individual transformation and collective progress. Furthermore, advocating for restricting the curriculum to reading, writing, and math fails to prepare students for life outside the classroom. Current technology, and the rate at which it advances mean that, at a minimum, students must be taught how to be adaptable to changes both in and outside the workplace. The following sections explore the ways education can prepare students for the future.

## Preparing for the Future

Ungerleider (2013) offers the following opinion of what Canadians believe education should be:

Most Canadians do not think their public schools should try to prepare the next generation for a specific set of circumstances. They know that it is impossible to predict the future with any accuracy. They believe firmly that both the next generation and the larger society will be well-served if public schools ensure that students possess a strong foundation in reading, writing, and numeracy; are disposed to treat others with respect; have the ability to work cooperatively with others; appreciate and act upon the values and principles that make us human; understand Canada and can appraise its strengths and limitations; and can exercise a critical intelligence that is adaptable to circumstances unforeseen. (Ungerleider, 2013, p. 21)

While it is true that reading, writing, and numeracy are essential, as are the social and thinking skills identified, this conception of the purpose of public-school education does not go far enough. It is precisely because we cannot know the future that information and communication technology, citizenship, and critical thinking<sup>1</sup> must be built into the concept of a good public-school education.

What is meant by “critical thinking,” and how does one teach it? The Government of Ontario defines critical thinking and problem solving as follows: “Critical thinking and problem solving involve locating, processing, analyzing, and interpreting relevant and reliable information to address complex issues and problems, make informed judgements and decisions,

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<sup>1</sup> In academic circles, the term "critical intelligence" can have multiple interpretations. To illustrate, the Rutgers School of Arts and Sciences has been designated as an Intelligence Community Center for Academic Excellence (IC CAE) by the federal government (Rutgers, n.d.). Ungerleider's (2013) use of the term relates to critical thinking skills. As a result, the emphasis is placed on exercising critical thinking skills rather than critical intelligence.

and take effective action” (Government of Ontario, 2020). As Sobocan (2022) suggests, the definition of critical thinking “should be expanded to incorporate literacy in general, and media literacy in particular” (Sobocan, 2022, p. 12). The following section describes how the Organisation for Economic Cooperation and Development (OECD) expanded the definition the definition of literacy, rather than the definition of critical thinking, to include computer literacy. While the focus of the OECD relies on the ability to navigate technology, a critique of the technology should also be undertaken with students, as described in more detail below.

### ***The Basics Include Computer Literacy***

The notion that education should solely concentrate on imparting the fundamentals – reading, writing, and numeracy - is flawed since it does not account for our technologically advanced and advancing society. If reading, writing, and math are the basics, then where does computer literacy fit? In the 2018 Programme for International Student Assessment Framework, the OECD broadened its evaluation of reading literacy proficiency to include integrating information technologies, such as reading digital text, in addition to traditional reading. According to the OECD, “. . . the primary interest when evaluating student reading literacy proficiency was the ability to understand, interpret and reflect upon single texts. While these skills remain important, greater emphasis on the integration of information technologies into citizens’ social and work lives requires that the definition of reading literacy be updated and extended” (OECD, 2019a). As technologies advance, the definition of education must change to ensure that students have the necessary skills required for work, social, and civic life (OECD, 2013). The ability to think critically about digital texts requires that students should learn about misinformation, content creation, academic versus journalistic publications, and so on to better navigate the modern world.

It is clear that computer literacy is an essential skill in today's world. However, studies from the OECD have shown that older generations are significantly less experienced with computers than their younger counterparts. Figure 2. Percentage of adult Canadians with no computer experience. (OECD, 2019b), based on Canadian adults' computer experience in 2018, reveals that over 50% of adults aged 55 to 65 had no computer experience, while over 30% of those aged 45 to 54 fell into the same category (OECD, 2019b). In contrast, less than 1% of adults aged 16 to 24 lacked computer experience (OECD, 2019b). With technology playing an increasingly important role in work, school, and everyday activities like mobile banking and online shopping, it is crucial that younger generations possess the skills necessary to navigate the digital world effectively.

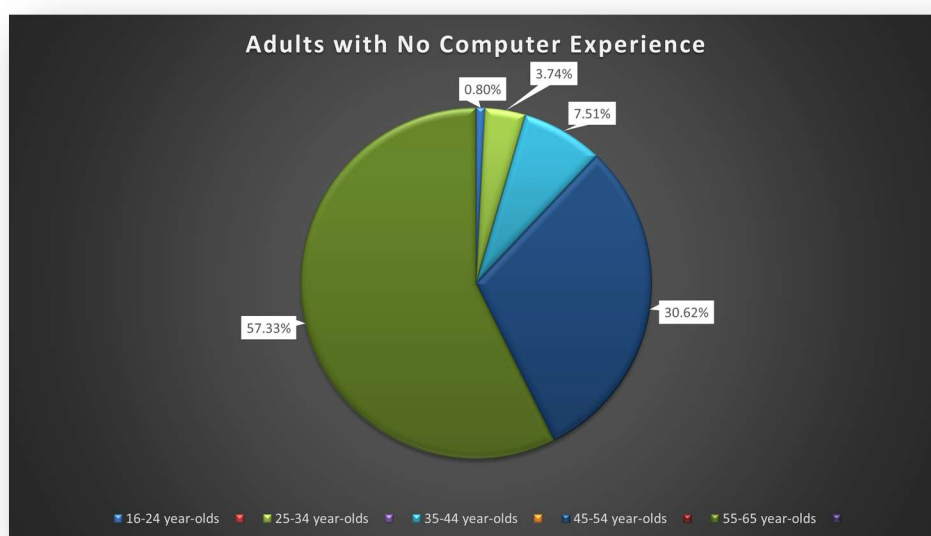


Figure 1. Percentage of adult Canadians with no computer experience. (OECD, 2019b)

The younger generations also benefit from growing up with technology around them, which could make them more adaptable to change. That said, not all workplaces advance technology as quickly as others, and technology also outpaces government regulation, again necessitating a broad understanding of information and communication technology and the

critical thinking skills required for problem-solving and adaptation. As mentioned, questioning and reflection on experience are integral parts of critical thinking: Just because a student has been surrounded by technology and can, for example, use a search engine or log in to social media, they may not have cultivated the skills necessary to understand *how* certain information reaches them and consequently, how other information does not. This can be a dangerous path for a young person, as depicted by the many stories of young people who become radicalized and potentially violent through the information they access online. For example, Regnér (2014) discusses the case of a Norwegian terrorist, Anders Behring Breivik, who was radicalized online and killed 77 people, justifying their killings Breivik cited over 500 online sources (Regnér, 2014, p. 140). Breivik's politically motivated actions (2014, p. 140) underscore the importance of critical thinking and citizenship. Cultivating these skills and encouraging active civic engagement could prevent similar tragedies while promoting a just and peaceful society.

### **The Role of Education in Citizenship**

Also falling outside of reading, writing, and numeracy is *citizenship*. For example, the Ontario Secondary School curriculum includes a grade 10 Civics and Citizenship course with “expectations . . . [that] are considered the foundation for citizenship education at the secondary school level in the province, and their successful completion is required for graduation” (Butler & Milley, 2020, p. 1134). Expectations fall under three categories. First, *Political Inquiry* includes diverse question formulation, effective sourcing and organization of information, critical source assessment, application of political thinking concepts, and appropriate communication techniques (*Civics and Citizenship: Expectations by Strand*, 2022). The second category is *Civic Awareness*, which includes civic issues, democratic citizenship, government structures, constitutional rights, and global citizenship in Canada, examining perspectives,

beliefs, responsibilities, and international implications while considering the impact of historical documents and current human rights issues (2022). Lastly, Civic Engagement, Service and Action focuses on civic contributions at various levels and actions that benefit society. Additionally, students examine representation, national identity, civic literacy, and investigate youth engagement opportunities (2022). On the Government of Ontario's education website, courses not only include a section titled "Information for Parents" for each course, each category above includes a section titled "Why is my child learning this" (2022). There is transparency about why the curriculum includes, for example, learning about traditions of other cultures both within Canada and globally. However, parents require the digital literacy discussed in the previous section to find information regarding the curriculum. As noted, depending on the parent's age group, they may have little or no experience navigating digital information.

Both the parents' guide and curriculum make it clear that civic education is a necessity for understanding the political society we live in (and how it compares to other societies) and the transferable skills acquired: Critical thinking and problem solving, global citizenship and sustainability, communication, self-directed learning, and digital literacy. Much of the Ontario secondary school curriculum identifies acquiring critical thinking skills as a learning outcome. However, the role of the teacher is to determine how to integrate critical thinking into lessons.

### **Curriculum Policy and Practice**

While we have broadened *good education* to include technology and citizenship as fundamentally necessary criteria to prepare students for the future, how do the concepts transfer to the curriculum and the classroom? Butler and Milley (2020) discuss the flexibility of lessons based on the expectations provided for in the curriculum and follow four teacher candidates. They attempt to meet the criteria in the curriculum policy through course planning and delivery.

They note that curriculum policy can be detailed or “[offer] high-level goals that leave teachers significant leeway to shape curricular content, pedagogy, and assessment in the classroom” (Butler & Milley, 2020, p. 1136). While not a study of individual candidates’ pedagogical practices, they did find that teacher candidates chose to integrate parts of the curriculum in different ways, focusing on different areas based on their own experiences and skills. For example, one candidate focused on citizenship through “social integration,” while another focused on citizenship through “creating inclusive spaces” (2020, pp. 1144–1146). The teacher candidates had agency over how they implemented the curriculum.

However, poor implementation may, in part, be to blame for the media sensationalization that leads to polarization over what should be taught in schools. As noted in the introduction, and as Butler and Milley note, those areas determined to be important by educators and policymakers may be contentious with parents. Butler and Milley point to the Mclean’s 2012 article titled, “Why are schools brainwashing our children?” (Reynolds, 2012), which claims that educators are taking social justice *too far* with primary school children. Reynolds argues that the political influence on children is too progressive, despite counterarguments that children are exposed to political information and require a space to discuss it. Sobocan (2022) addresses the argument that students are being taught to conform to educators’ political leanings by suggesting, “On the assumption that students have some capacity for independent, critical judgment, we need not be concerned that the examples [provided by educators] may be inadvertently slanted *if* the students are not only permitted but encouraged to assess the merits of these examples” (2022, p. 126). In other words, if educators incorporate the practice of critical thinking within lessons, examples allow students to think through the information presented, question it, reflect on it, and form individual opinions: brainwashing or indoctrination is not the goal.

## Conclusion

In a world of constantly evolving technology, diverse social landscapes, and a wealth of information, the role of education has never been more critical. As discussed throughout this essay, traditional education models focusing solely on "the basics" are no longer sufficient. To prepare students for the future, we must expand our definition of an excellent education to include essential skills like critical thinking, computer literacy, and active citizenship.

John Dewey's critique of externally imposed aims in education still holds today. Rigid curricula that limit education to reading, writing, and math fail to equip students with the skills they need to thrive in a complex, ever-changing world. As the OECD recognizes, understanding, interpreting, and reflecting upon digital information is vital. Computer literacy and critical thinking skills are essential in a society where technology is increasingly central.

Moreover, citizenship education is fundamental to preparing students for life beyond the classroom. It empowers them to understand their political society, fostering a critical intelligence that can adapt to unforeseen circumstances. The teacher's role in integrating these skills into lessons is crucial, allowing students to engage critically with the information and form their own opinions. However, implementing such a forward-thinking curriculum can be challenging, and debates over what should be taught in schools continue. It is important to emphasize that encouraging critical thinking does not equate to indoctrination. Educators should give students the tools to think independently, critically assess information, and form their own judgments.

Today's world is in constant flux. By expanding our concept of education, we can better prepare the next generation for an unpredictable and constantly changing future. Only by investing in students can we create a brighter and more prosperous world for all.

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## Figures

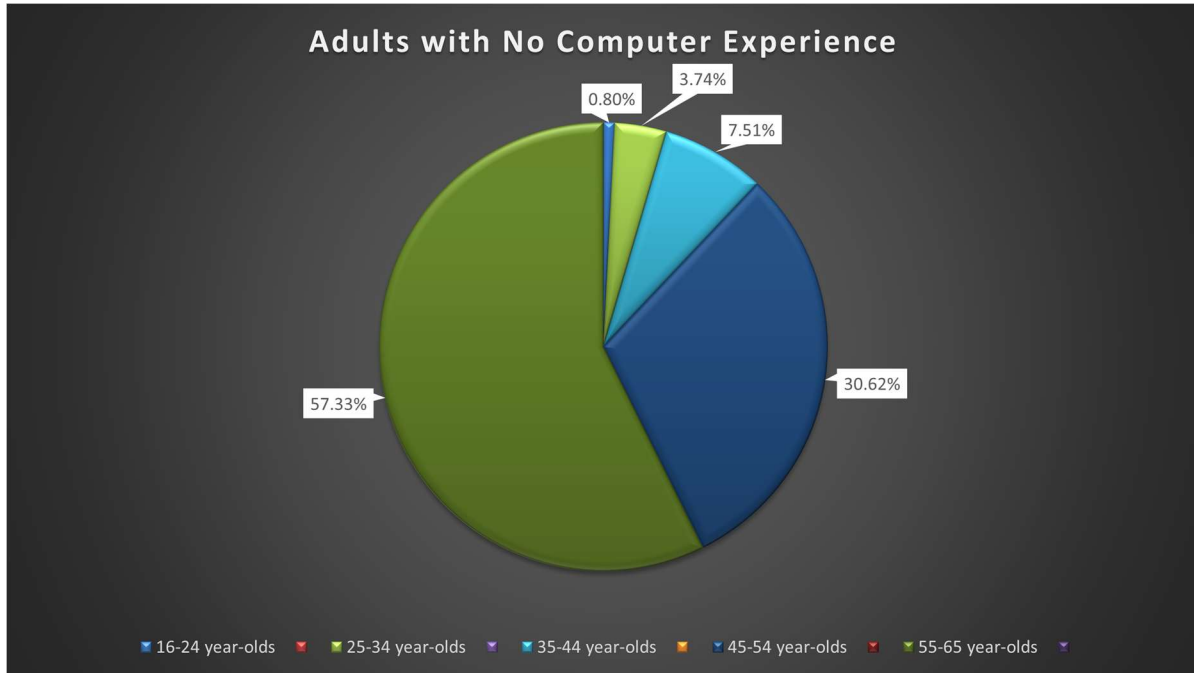


Figure 2. Percentage of adult Canadians with no computer experience. (OECD, 2019b)