John Dewey and the Use of Technology in Education

Lisa Taylor

University of Kansas

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Dr. John Rury

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John Dewey began writing about his philosophy of education in the late 1890s, and didn't stop until the late 1930s. In his books – expounding educational ideas such as the need to experience the world in order to learn about it, and the belief that curriculum is the servant of the learner, and not the other way around - his voice has a modern ring; he writes with vast assurance about how children learn, and how they should be educated, and how a democratic society should order its education system, but he does not come across as patriarchal. His ideas seem fresh, because they are based on close analysis and logical reasoning, but they are also extremely practical. Dewey bases his philosophies of education on his actual observance of children, and his knowledge of how they tick, partly from his establishment of and involvement in the University of Chicago laboratory schools. This allowed him to put into practice his theories that a socially and democratically progressive classroom would offer much more to each student, and to society as a whole, than the traditional schools that had been in place for decades. As Dewey asks:

> Can we find any reason that does not ultimately come down to the belief that democratic social arrangements promote a better quality of human experience, one which is more widely accessible and enjoyed, than do non-democratic and anti-democratic forms of social life? Does not the principle of regard for individual freedom and for decency and kindliness of human relations come back in the end to the conviction that these things are tributary to a higher quality of experience on the part of a greater number than are methods of repression and coercion or force? (Dewey, 1938, p.34)

In the book *Experience and Education* (1938), Dewey discusses the differences between traditional and progressive education in detail. He makes it clear that he does not believe in strict

"Either-Or philosophies" (1938, p. 20), so he does not advocate discarding every aspect of traditional schooling. But, he asks us to allow the then-current thirst for new or progressive education to speak volumes about a dissatisfaction with the way schooling had been done for so long. He lists the broad ideas that are foundational to traditional education: a focus on transmitting the same information and skills from past generations to new generations; the carrying out of moral training that conforms to rules and standards developed in the past; and a dedication to following the organizational structure of school according to "time schedules, schemes of classification, of examination and promotion, of rules of order" (Dewey, 1938, p. 18). There was also a continued focus on books and textbooks, and on teachers as transmitters of lore and agents of classroom enforcement.

> In contrast, Dewey lays out the philosophies and outworkings of "the new education":
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> To imposition from above is opposed expression and cultivation of individuality; to external discipline is opposed free activity; to learning from texts and teachers, learning through experience; to acquisition of isolated skills and techniques by drill, is opposed acquisition of them as means of attaining ends which make direct vital appeal; to preparation for a more or less remote future is opposed making the most of the opportunities of present life; *to static aims and materials is opposed acquaintance with a changing world*. (Dewey, 1938, p. 19-20, emphasis mine)

Dewey's firm stance was that learning had to take place in the context of the individual experience of each learner, rather than be imposed from outside of that context, which was a departure from the status quo of education in both the role of the teacher and learner, and the daily structure of the classroom.

This brief overview of Dewey's views on progressive education is important in a discussion of educational technology from a Deweyan perspective, as of course Dewey lived and worked prior to the invention of the computer, the internet, or any highly accessible technological form of mass communication. To consider what his views would have been on the use of technology within education, we have to extrapolate on the basis of his philosophical theories. In the light of Dewey's deep and continuing influence on educational thought and training, that extrapolation is worth attempting.

Two Views of Technology

In the past ten years, two broad schools of thought have developed around the unceasing and increasing Western adoption of constantly accessible personal technology; the expectation of universal and instant internet access; and the rise of social media as a means of communication, self-identity, self-aggrandizement, and comfort. One view is that our society and we ourselves are in danger of ceding our ability to reflect and think critically and profoundly, our independence of thought and action, and our ability to remember, to the seduction of diving into the warm sea of information, entertainment and constant feedback available through Google, Facebook and Instagram, and compulsive checking of emails and texts. One of the most well-known voices in favour of stepping back from this immersion in technology is found in Nicholas Carr's book *The Shallows* (2011), in which he warns that the sea that we are so eager to jump into is only a few inches deep, and we will find ourselves beached and gasping at the realization that we can't get back the deep thinking and quiet moments that we used to experience on a regular basis, and that led to huge advances in our civilization. Carr is representative of many other voices, who raise points about the hazards of technology that require consideration in relation to the education system. Today's students have to contend with divided consciousness,

shortened attention spans, and reliance on electronic devices; "[c]alm, focused, undistracted, the linear mind is being pushed aside by a new kind of mind that wants and needs to take in and dole out information in short, disjointed, often overlapping bursts – the faster, the better" (Carr, 2011, p. 10).

Adam Alter, in discussing what he calls "addictive technology," studied the rise in the number of people whose lives have been upended by their inability to step away from technology, because that is how it has been designed. Alter writes: "Greg Hochmuth, one of Instagram's founding engineers, realized he was building an engine for addiction…Instagram, like so many other social media platforms, is bottomless. Facebook has an endless feed; Netflix automatically moves on to the next episode in a series; Tinder encourages users to keep swiping in search of a better option. Users benefit…but also struggle to use them in moderation" (Alter, 2017, p. 3).

In her book *Alone Together* (2011), Sherry Turkle explored the increasing amount of time humans spend interacting with devices, or people on the other end of devices, and how it impacted their ability to interact with people in real life, and develop strong relationships with friends, teachers and even family. She says, "Overwhelmed by the volume and velocity of our lives, we turn to technology to help us find time. But technology makes us busier than ever and ever more in search of retreat. Gradually, we come to see our online life as life itself.…Technology reshapes the landscape of our emotional lives…" (Turkle, 2011, p. 17).

Another viewpoint is that of technology writer Michael Harris, who decided to step away from all technology for one month, after documenting his increasing concern that today's children are true 'digital natives' – they will never know a world without the internet, and will never be without hand-held devices for connecting to that internet, and it will likely never occur

to them that they can or even should step away from the constant flow of input and social feedback for a moment of analog respite. As he says, “I fear we are the last of the daydreamers. I fear our children will lose lack, lose absence, and never comprehend its quiet, immeasurable value” (Harris, 2014, p. 48).

The other side of this debate finds a representative voice in Clive Thompson, whose book, *Smarter Than You Think*, argued that technology was certainly changing our minds, but not for the worse. Rather than giving up the sharpness of mind and depth of thinking that used to find expression in traditional forms - reading, longhand writing, and quiet sessions of reflection - Thompson said that we added to our ability to think, invent and remember by using technology as an ‘external brain’ to boost our capacities to express ourselves and document our thoughts and ideas. The benefit of course extends to education, as students have the ability to instantly find information they need, create projects using sophisticated technology, and communicate easily and well with students and teachers who may not be in the same building or even geographical area. One example he gives is the use in a college classroom of a digital mapping program that allowed students to analyze a district voting policy in a certain area, and gain new understanding of a law that likely should be changed. Thompson says, “[D]igital tools are giving us new and powerful ways of grappling with information…Computational power isn’t just changing the old literacies of reading and writing. It’s creating new ones…This opens up our mental tool kit, helping us spy patterns in the world that were previously invisible to us” (2013, p. 87).

Antero Garcia also championed the use of technology in teaching in a low-income urban school. In a book that describes a year in a South Central Los Angeles high school, he introduces us to students who often don’t have lunch, or a backpack, but they all have a phone – it is the one constant, for communication with family, for socializing with friends, and for keeping up with

what's going on in their world. To Garcia, not to embrace the multimedia world that today's students live in is to disrespect their lived reality, and to tell them that we are not interested in teaching and communicating in a way that makes sense to them. He says, "In order for *every* student to be engaged in meaningful academic and civic development, today's public school children need to be immersed in learning environments that engage the multifaceted nature of learning today….At the same time, educators need to gain a more nuanced understanding of what is happening within classrooms and schools with mobile media devices" (Garcia, 2017, p. 13-14).

Where Would Dewey Stand on the Use of Technology in Education?

In his book *The Child and the Curriculum* (1902), Dewey discussed the importance of making sure that curriculum – the subject matter of teaching - had its proper place in the child's life and in the development of a meaningful learning environment. Dewey's concern was with bare knowledge or facts being fed to a child, unconnected from any context or experience; or unrelated to his or her developmental ability to make sense of the learning; or without the presence of a teacher who acts as an 'interpreter', translating factual knowledge into experiences meaningful to the individual development and interests of a child that she knows and cares about. In Dewey's philosophy, knowledge made up of meaningful facts is "[t]he genuine form, the real symbol, serv[ing] as methods in the holding and discovery of truth" (Dewey, 1902, p. 31). If knowledge is not developed and understood through experience lived by a child, but is "induced from without," it is "a *bare* or *mere* symbol; it is dead and barren" (Dewey, 1902, p. 32).

There is a case to be made, I think, for a Deweyan classification of technology in a classroom or in a child's life from a young age as the presence of a 'dead symbol'. Experience – personal, hands-on experience – is the key, the clue, the code that a child uses to make sense of

what they see or hear or are taught. Dewey says that if a new piece of knowledge is abruptly presented, without having a connection to a child's life, "[i]t condemns the fact to be a hieroglyph: it would mean something if one only had the key. The clue being lacking, it remains an idle curiosity, to fret and obstruct the mind, a dead weight to burden it" (Dewey, 1902, p. 32). Looking at the use of technology as the ubiquitous presence that it is in the life of a child today, it can be as if an outside force was inserted into the experience of a child, and often without the interpretive role of a teacher or guiding adult in an educational context. No hands-on experiential learning is apt to take place with a device in the hand instead, so there is a barrier between the child and real-life learning; the 'dead symbol' ends up closing the child off from the world around him. Harris (2014) talks about seeing teenagers sitting next to each other, never speaking, possibly messaging each other, but only staring into their phones. Technology as framed according to this interpretation of Dewey's beliefs about curriculum, could be seen to be equivalent to an outside force parachuted into a learning environment to the detriment of true learning.

Another factor that Dewey discusses that could be correlated to technology is his idea of the power of habit, or habituation. In *Democracy and Education* (1916), he defines a habit as a "form of executive skill, of efficiency in doing" (p. 27), and education as a means of acquiring executive, motor and intellectual habits that will allow for further growth and learning. However, in typical fashion, Dewey emphasizes the essential aspect of any habits: they must be good and not bad. A good habit is a way of creating a structure that is based on a person's individual bent, that does away with inessentials in a task, and that allows for "ease, economy, and efficiency of action. Any habit marks an inclination – an active preference and choice…A habit also marks an intellectual disposition" (Dewey, 1916, p. 28). A good habit contains an intellectual element; it is

based on thoughtful choices. Therefore it leads to "varied and elastic use, and hence to continued growth" (Dewey, 1916, p. 28-9). Growth is a cornerstone of Dewey's philosophy, and a mark of education. He goes on to say that if intelligence is disconnected from habits, they "reduce themselves to routine ways of acting, or degenerate into ways of action to which we are enslaved….Routine habits are unthinking habits….habits that possess us instead of our possessing them, are habits which put an end to plasticity. They mark the close of power to vary" (p. 29) – and therefore an end to growth.

This takes us back to the tendency of technology – which in fact is baked into its very essence – of creating mindless habits. The addictive power of digital devices, detailed throughout Alter's book, *Irresistible* (2017), through numerous specific examples, is also underlined by the first anecdote he relates in the book. When Steve Jobs unveiled the iPad in 2010, "For ninety minutes, [he] explained why the iPad was the best way to look at photos, listen to music, take classes on iTunes U, browse Facebook, play games, and navigate thousands of apps. He believed everyone should own an iPad. But he refused to let his kids use the device" (p. 1). Numerous tech founders and executives ban or limit time on devices in their homes, as they are very aware of their addictive qualities. According to an expert in digital app design, quoted in Alter (2017), "[T]here are a thousand people on the other side of the screen whose job it is to break down the self-regulation that you have" (p. 3).

This is a classic example of an unthinking habit, and the ensuing enslavement to the habits of unchecked use of digital technology could have been predicted by Dewey. Without thoughtful, guided support in the use of technology, as in anything else, children – and adults – will not be able to free their minds from what is meaningless and search for true meaning in experience. Dewey also said, in relation to the education of 'drill and kill' and the use of rote

exercises in a classroom, that "[i]t is possible for the mind to develop interest in a routine or mechanical procedure, if conditions are continually supplied which demand that mode of operation and preclude any other sort….An interest in the formal apprehension of symbols and in their memorized reproduction becomes in many pupils a substitute for the original and vital interest in reality" (1902, p. 35-36). Any unthinking, unchecked use of technology, in the classroom or outside it, that leads to mindless habituation, would be strongly opposed by Dewey.

Dewey's disapproval of technology can be posited in these situations based on his objection to anything that acts as a 'dead symbol', and that erects a barrier between a child and the true learning that springs from real experience. He would also be anti-technology based on his opposition to mind-deadening habits that shut down hands-on experience, development and growth – all side effects of much of the technology we are exposed to every day.

However, Dewey was also a progressive thinker, who believed in the importance of educative experiences that provided continuity between the past and the future, and in the necessity for change and growth. He supported social justice, rights for women, rights for labourers, and civil rights well before most of his contemporaries. He would likely have had an open mind as well about the potential for good that technology offered, and the educational benefits that it could hold. In *Experience and Education* (1938), Dewey says: "[I]f an experience arouses curiosity, strengthens initiative, and sets up desires and purposes that are sufficiently intense to carry a person over dead places in the future…[e]very experience is a moving force" (p. 38). For Dewey, the key idea is *movement*, towards growth, embodied for him in the word 'continuity'. He says, "Growth, or growing as developing, not only physically but intellectually and morally, is one exemplification of the principle of continuity….I return to the question of continuity as a criterion by which to discriminate between experiences which are educative and

those which are mis-educative" (1938, p. 37). In the right hands, and the right setting, technology in education can provide educative experiences that are meaningful. Technology can bring students in North America videos of wild animals from Africa; can allow them to take a physics lesson from a teacher in Sweden; and can enable Zoom meetings with their teacher during a pandemic. As long as there is a juxtaposition of the two principles of interaction between internal and external factors for each student, and continuity of experience and forward movement, true learning can take place, according to Dewey. He says, "Continuity and interaction in their active union with each other provide the measure of the interactive significance and value of an experience. The immediate and direct concern of an educator is then with the situations in which interaction takes place" (1938, p. 44-45). If a worthwhile situation and experience is created, Dewey would almost certainly welcome the incredible opportunity and potential of technology in education, and would simply apply the same guiding principles to its use in a classroom.

Conclusion

In *Experience and Education* (1938), again, Dewey says this in relation to the creation of an environment by educators in which true learning can happen:

> Responsibility for selecting objective conditions carries with it, then, the responsibility for understanding the needs and capacities of the individuals who are learning at a given time. It is not enough that certain materials and methods have proved effective with other individuals at other times. There must be a reason for thinking that they will function in generating an experience that has educative quality with particular individuals at a particular time. (p. 46)

This was the important point for Dewey: that each student would have an individualized opportunity to learn through educative experience, at their level of development, and taking into account the continuity of their learning (bridging past and future experiences), as well as the interaction between their character and interests, and the environment and experiences available to them. Within this framework, many different types of curriculum, activities, teachers, objects, field trips, and technology, would find a place. As long as the end result was growth and learning for the individual, in a way that was meaningful to them, the goal of education would have been met.

Elsewhere, Dewey said, “The distinction between information and wisdom is old, and yet requires constantly to be redrawn. Information is knowledge which is merely acquired and stored up; wisdom is knowledge operating in the direction of powers to the better living of life” (1909, p. 36). Wisdom can be found through or in spite of technology, I believe Dewey would say, as long as the other ingredients for educative experiences are present.

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