

Starting from Scratch: Using Digital Media and Technology to Develop  
21<sup>st</sup> Century Montessori Learners  
Inquiry Proposal  
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## Starting from Scratch: Using Digital Media and Technology to Develop 21<sup>st</sup> Century Montessori Learners

### **Introduction**

As an educator, I have always been passionate about integrating digital technology into my practice, even before joining the DLC program. This passion grew even more so when I became a Montessori teacher, as I could not help but notice how little digital technology is actively used to complement the Montessori philosophy in developing 21<sup>st</sup> century learners in the middle school level.

I think that it is important for students to develop computer and digital technology skills, as they are a key competency in developing 21<sup>st</sup> century learners. Throughout the next two years, I want to explore having my students move from using traditional software such as Microsoft Word and Microsoft PowerPoint on a computer to using multimedia apps and social media on portable devices like tablets and smartphones as ways to collaborate, demonstrate, and share their learning.

After being re-introduced to Scratch by another cohort member, I was reminded about how powerful it could be to use as a learning tool, and would like to use it as part of my inquiry to see if it could serve as a new type of material in a Montessori environment. As an avid user of social media, I also want to implement it into my practice in order to make communication, collaboration, and organization of learning between teacher, students, and parents more effective and efficient, while continuing to develop middle school students into digitally responsible young adolescents.

### **Inquiry Questions**

Over the next two years, I would like to investigate how digital technology can be used to develop 21<sup>st</sup> century Montessori learners without losing integrity of a Montessori learning environment. Within this realm, I would like to perform further inquiries on the following questions:

- How might Scratch be used as a new way to demonstrate, share, and facilitate learning in a Montessori classroom?
- How might Scratch be compared to traditional Montessori grammar materials in terms of learning about the syntax of a language?
- How might social media be used to facilitate communication, collaboration, and organization of learning between Montessori teachers, parents, and students?
- How might social media be used a tool to develop students into global citizens as envisioned by Maria Montessori?

### **Inquiry Purpose**

I believe middle school is a unique place to teach and learn: this is the transitional period in which students not only go through changes physically but also mentally and social-emotionally as they mature into adolescents. Their brains seem to enter a process of rewiring and reconfiguring existing concepts in order to create new understanding, all the while continuing to make connections with new content. Therefore, I believe it would be a very good time at this age to introduce new forms of digital technology into their lives. Middle school students are also learning to become more independent with the way they think and interact with one another, with many of them beginning to possess their

own laptops, tablets, and smartphones to do so. With the push for 21<sup>st</sup> century learning, I feel that I would do them a disservice if I do not teach them how to efficiently and effectively use digital technology as tools for learning.

The second part of my inquiry revolves around integrating technology into Montessori practice. If one were to look closely at the 21<sup>st</sup> century skills or competencies outlined by Canadians for 21<sup>st</sup> Century Learning & Innovation (C21), they would find areas that have already been promoted by Maria Montessori last century. However, an area that is rarely mentioned - likely due to the unforeseen advancement of technology - is competencies around computer and digital technologies and communication. It seems to me that the Montessori method is still lagging behind in this regard; therefore I am hoping that through my research, I could suggest possible things a Montessori educator can do to catch up to the 21<sup>st</sup> century.

### **Key or Critical Concepts**

As mentioned in the previous section, while multiple foci of the Montessori method such as self-direction (Lillard, 1996; Lillard, 2011), life-long learning (American Montessori Society, 2015), peace and global citizenship (Duckworth, 2006) align with the 21<sup>st</sup> century competencies suggested by C21 (C21 Canada, 2012), the incorporation of digital technology use in the Montessori classroom has been very limited. In fact, Lillard (1996; 2011) stressed limited use of computer and technology in the Montessori classroom based on financial and pedagogical reasons. Various studies in recent years began to look at using technology in a Montessori classroom, but it was mainly focused on being used for word processing (Dunn, 2000), organization and research (Hubbell, 2003), and to assist students with learning difficulties (Boyd, 2008). Therefore, I would like to explore new ways in which digital technology could be used in the Montessori classroom to developing 21<sup>st</sup> century learning competencies, without losing integrity of the Montessori philosophy.

I would like to experiment with having students incorporate the use of the Scratch software developed by the MIT Media Lab in their learning. It uses a constructivist approach to teach users how to code (Peppler & Kafai, 2005), and I am curious in how learning a new language this way is similar to or different from using traditional Montessori grammar materials to learn about the syntax of the English language.

I would also like to integrate the use of social media in my classroom to facilitate communication, collaboration, and organization of learning between teachers, students, and parents. Moreover, I would like to use it as a tool to teach my students to become responsible global citizens – as Maria Montessori would like to envision her students to be – not only in the physical world but also in the digital realm.

### **Ethical Considerations**

Throughout this research project, there are a number of ethical considerations that may arise or problems that will have to be resolved. These are:

- Ensuring the privacy of students is protected when using Scratch and social media, which includes finding out where personal information is stored and using pseudonyms for identities.
- Obtaining parent consent for students to use social media in various learning activities, including sharing of photos and pieces of work.

- Checking with district policies for a list of approved software and cloud tools and submitting applications for approval if necessary.
- Ensuring responsible usage of social media, such as producing appropriate content and displaying respectful behaviours when communicating with one another.

### References

- American Montessori Society. (2015). FAQs. Retrieved from <http://amshq.org/Montessori-Education/FAQs>
- Boyd, B. F. (2008). Assistive technology for every child. *Montessori Life: A Publication of the American Montessori Society*, 20(1), 30-35.
- C21 Canada. (2012). *Shifting minds: A 21st century vision of public education for canada*. ().
- Duckworth, C. (2006). Teaching peace: A dialogue on the montessori method. *Journal of Peace Education*, 3(1), 39-53.
- Dunn, S. E. (2000). Technology: Where is it taking us? A "writing" perspective. *Montessori Life*, 12(1), 34-35.
- Hubbell, E. R. (2003). Integrating technology into the montessori elementary classroom. *Montessori Life*, 15(2), 40-41.
- Lillard, P. P. (1996). *Montessori today: A comprehensive approach to education from birth to adulthood*. New York: Schocken Books Inc.
- Lillard, P. P. (2011). *Montessori: A modern approach* (eBook ed.) Knopf Doubleday Publishing Group.
- Peppler, K. A., & Kafai, Y. B. (2005). *Creative coding: Programming for personal expression*. Retrieved July 16, 2015, Retrieved from <https://download.scratch.mit.edu/CreativeCoding.pdf>