On Computational Thinking: A Perspective From Rural Saskatchewan

**Episode 0: Introduction Script** 

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ETAD 992: Project

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April 30, 2023

Hello, and welcome to this series of episodes on computational thinking and education in rural Saskatchewan. I'm Stephen Hadden, and this is my final project for my graduate studies in Educational Technology and Design at the University of Saskatchewan.

I figure I will start with a little introduction, and then we can get into the details of the project, and then you can explore the different media available.

I am in my 12th year of teaching. Trained in Ontario, I moved to the northern village of Beauval Saskatchewan in 2011 to start my teaching career. After 4 years in Beauval, we decided it was time for our young family to move closer to a city centre. We ended up in the town of Biggar Saskatchewan, about one hour west of Saskatoon. We have now been in Biggar for 8 years.

I teach grades K-12 in Biggar. In my 12 years of teaching, I have been a chemistry, biology and physics teacher, math teacher, computer science teacher, and drama teacher in high school. I have taught math, science, technology and practical and applied arts in grades 7-9. I have also been a full time grade 3/4 teacher, a half-time grade 3 teacher, and provide technology, drama, and physical education in elementary classes. I also provide extra support for reading skills and reading rotation. Besides all of this, I also have the role of personalized electronic blended learning mentor at my school - a teachermentor position developed by Sun West School Division to support other teachers to explore learning personalization, blended learning, and learning through and with technology.

Outside of school, I love spending time with my family, playing board games and video games, cooking, and musical theatre. Recently I played the voice of Audrey Two in our community theatre production of Little Shop of Horrors.

I have lots of educational projects and passions on my mind, but a focus during my graduate study has been on computational thinking, teaching with computers, and coding. For this project, I wanted to continue research related to a paper I wrote in ETAD 802 on computational thinking. I wanted to explore the ideas a little more and attempt to provide tools and information on computational thinking in a bite sized format. I wanted to create something that might encourage educators in Sun West School Division and within Saskatchewan to explore ways that computational thinking and computer education are currently being applied in our classrooms, the value it adds for student learning, and how it could be implemented further.

We will get into computational thinking a little more in the next episode, but I figure I should start with a core definition here from Cuny, Snyder and Wing (2010):

"Computational Thinking is the thought processes involved in formulating problems and their solutions so that the solutions are represented in a form that can be effectively carried out by an information-processing agent". Basically: There are some problems, and ideas, that could use a form of technology to come to a solution - have we considered those tools? But to consider those tools, we must have some idea about how those tools work - computational thinking helps us understand how those tools work. I'm hoping to inform and encourage others to explore computational thinking through their own practice, and potentially see the expansion of computational thinking education throughout the elementary grades.

I want to point out that I don't think that technology - in and of itself - is the solution to all of our problems, it can even be the root of many of societies current problems (Papert, 2020, p. 27). But I believe that technology needs to be used for good, and that we as educators can and should provide students with the opportunities to see how technology can aid with social concerns, making tasks easier, or having more options to express our creativity. Computational thinking needs to be part of our thinking processes: to know how our devices work, how artificial intelligences are trained, and to know how we can best leverage the processing power that is around us.

There are lots of things we can do differently to better utilize and understand the digital and analog tools available to us to explore and teach our content areas and our skills - it's the nature of education. Students, society, and our tools keep changing, and so we as educators adapt, integrate, and focus our instruction to ensure our students get a quality education that is relevant and current.

I selected a podcast as the format for the project. The podcasts are relatively short - between 5-10 minutes. Podcasts are easily accessed, and the roughly 10 minute time length are digestible for a busy teacher on the go.

The podcast includes eight episodes. There is the introduction, and there are four episodes where I share about aspects of computational thinking. There are three interview episodes, where I ask division leadership from Sun West School Division and a member of the SaskCode Team about their observations and experiences with computational thinking. (SaskCode is an organization that provides professional development and tools to teach robotics to divisions around Saskatoon.) The episodes are located on stephenhadden.online/ct and they will include the scripts and links that teachers can explore to learn more.

Without any further delay - It is time to get into: What is computational thinking?

## References

- Cuny, J., Snyder, L., & Wing, J. M. (2010). *Demystifying Computational Thinking for Non-Computer Scientists*.
- Papert, S. (2020). *Mindstorms: Children, computers, and powerful ideas* (Revised edition). Basic Books.