# Major Project Prospectus
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Given the immense technological change in society today, and given the requirements for a workforce flooded with information daily, it seems like an education intertwined with Science, Technology, Engineering, and Mathematics (STEM) may foster many of the required skills and competencies students will need to succeed. The purposeful integration of STEM education, which at its heart builds upon problem-based learning, project-based learning, inquiry, and social learning (to address real-world problems), aligns well with the required 21st century skills - particularly 21st century leadership skills and competencies. Therefore, the purpose of this project is to assess ways in which STEM education can contribute towards the acquisition of these leadership skills, and to propose some lesson designs and learning opportunities for use at the elementary school level, based on the Grade 6 BC Ministry of Education curriculum.

While the research presents literature on STEM education and leadership at the professional level (i.e, Buckner & Boyd, 2015; Elrod & Kezar, 2014; Elrod & Kezar, 2015; Elrod & Lester, 2011; Merrill & Daugherty (Eds.), 2010), few articles address ways in which STEM education can encourage leadership among students. In fact, Hine (2014) states, "Student leadership and student leadership development … is a critical issue worth investigating due to its dynamic nature and implications for the future, as well as to the striking dearth of literature associated with this subject" (p.79). Therefore, this project examines the following question: **How can STEM education be a pathway to developing 21st century leadership and career skills?** This question is important because our world will need a workforce with citizens who have the ability to collaborate, problem-solve, and demonstrate leadership through the murkiness of change.

To answer this project's critical question, research and theory outlined in the literature review will be incorporated into the day-to-day practice of a Grade 6 elementary school classroom. This pedagogical approach will also extend to the school and community, so the projects' goal of students being positive contributing citizens, who are able to demonstrate leadership through action, will be meaningful and realized in the real-world context. The project' s lesson plans and reflections will be posted on a website and shared as an open educational resource. It is hoped this process will lend itself to valuable feedback, while perhaps being a helpful resource for others interested in STEM education and leadership. It is expected that modification of lesson plans, etc. (due to learning from practice and feedback from others), will lead to better design, and more importantly, to an increased acquisition level of skills and competencies deemed important for happy, productive, empathetic, and ethical global citizens and student leaders…leaders of change… and responsible stewards of the Earth.

Finally, it is expected that this project will revolve around a central focus of inquiry. I would like to partner up with another Grade 6 class in another community/province/country to allow for diverse views and perspectives, and to help students understand that leadership (in this case, by way of STEM education) is a universal responsibility, which should extend far beyond the walls of the classroom.

Note: References are attached to the Chapter 2 Literature Review submission