Research Project Two

Title: Student Perceptions of Charter Goal Implementation (June 2025)

As part of STEM Collegiate's preparation for the upcoming Alberta Education charter audit, the Executive Director of Research and Instruction designed, administered, and analyzed a student survey aligned directly with the four charter goals. This internal research project was intended to generate systematic evidence of how students perceive the implementation of key elements of the charter mandate, particularly in relation to STEM learning, problem solving, resilience, and pathways to post-secondary STEM opportunities.

Methodology

Participants

On June 6, 2025, all students in Grades 7–10 were invited to complete an online survey. A total of 315 students responded:

- Grade 7: 84 students (27%)
- Grade 8: 120 students (38%)
- Grade 9: 64 students (20%)
- Grade 10: 47 students (15%)

Just under half (45%) of respondents had been at STEM Collegiate for one year, and 55% for two years, allowing the survey to capture both newer and more established students' perspectives.

Instrument & Design

The survey consisted of a small set of closed questions (Yes / No / I don't understand the question), each preceded by a short, student-friendly preamble. Each question was deliberately mapped to one charter goal and written to:

- operationalize that goal in terms students could understand, and
- capture perceived learning experiences and outcomes related to that goal.

A separate data cut for Grade 7 students (N ≈ 84) was produced to examine how early adolescent students are experiencing the program in their first years at STEM Collegiate.

Procedure & Analysis

The survey was administered near the end of the 2024–2025 school year. Participation was school wide and completed simultaneously at the start of period 1 on June Data were analyzed descriptively (response counts and percentages) overall and by grade level. Results were then mapped back to each charter goal to inform the self-evaluation and to identify areas for continued growth.

Key Findings by Charter Goal

Charter Goal 1

Students will graduate with superior STEM knowledge, skills, and competencies that provide a strong foundation for lifelong learning in a fast-paced global environment.

Measure used:

A question asking whether students felt they were learning to use new technologies more than peers in non-STEM schools, framed through their experiences in Options (Design & Engineering, Computer Science, Modern Media, Video Game Design, etc.).
Overall results (Grades 7–10):

- 90% of students responded Yes, indicating they believe they are learning more about using new technology than students their age in non-STEM schools.
- 9% responded No, with a very small proportion selecting "I don't understand the question."

Grade 7 snapshot:

- Among Grade 7 students (N=84), 77 said Yes and 7 said No (approximately 92% Yes, 8% No).

Interpretation

Students, including those at the entry level (Grade 7), clearly perceive that STEM Collegiate is giving them enhanced exposure to technology and stronger technology skills than they would receive elsewhere. This perception aligns with the charter mandate to provide superior STEM knowledge and competencies and supports the conclusion that Goal 1 is being meaningfully enacted from the student perspective.

Charter Goal 2

Students will have core STEM knowledge and skills needed to become global innovators and problem solvers.

Two survey questions were aligned with this goal:

1. A question about working with different types of information and making informed conclusions/creating something interesting ("STEM skills").
2. A question about how often students work on assignments or projects requiring problem-solving skills *(finding, understanding, and solving problems using logical thinking and creativity).*

STEM skills (data, information, conclusions – Q5):

- Across Grades 7–10, 79% of students responded Yes, indicating they often work on assignments or projects where they look at different types of information and then draw conclusions or create something interesting.
- 16% responded No, and 6% indicated they did not understand the question.

Grade-level analysis shows this pattern is consistent across grades, with similar or slightly higher "Yes" rates in Grades 8–10. Among Grade 7 students, 65 responded Yes, 14 No, and 5 indicated they did not understand the question, indicating that even the youngest students see these higher order thinking opportunities in their core classes.

Problem-solving skills (Q6):

- For the problem-solving question, 83% of students overall responded Yes and 15% responded No, with a small remainder indicating they did not understand the question.

Among Grade 7 students, the pattern is very similar: 79% reported that they often work on assignments or projects requiring problem-solving skills, and 21% said No.

Interpretation

Across grades, students perceive that their core and options classes regularly require analysis, synthesis, and creative problem solving. This provides strong evidence that STEM Collegiate is meeting Charter Goal 2 through the instructional emphasis on cultivating core STEM skills associated with innovation and complex problem solving. The fact that Grade 7 students report similarly high levels of these experiences suggests that exposure to these skills starts early and is not limited to upper grades.

Charter Goal 3

Students will be community-minded learners who demonstrate courage, resilience, respect, and caring for others.

Measure used:
A resilience-focused question asking whether being a student at STEM Collegiate is helping them become more resilient, with a clear definition provided (continuing to try even when failing or finding learning difficult).

Overall results (Grades 7–10):

- 65% responded Yes, indicating that they feel being at STEM Collegiate is helping them become more resilient.
- 29% responded No.
- 6% indicated they did not understand the question.

Grade 7 snapshot:

- In Grade 7, 57 students said Yes, 20 said No, and 7 indicated they did not understand the question (about 68% Yes, 24% No, 8% unsure).

Interpretation

While a clear majority of students perceive growth in their resilience, the proportion responding No is higher than for the more academic/technical dimensions of the charter (Goals 1, 2, and 4). This suggests that, although progress has been made, resilience and broader socio-emotional outcomes remain a key area for continued work, especially given earlier challenges documented in the AERR related to welcoming, caring, respectful, and safe learning environments.

Charter Goal 4

Students will have the opportunity to connect with post-secondary institutions and industry to provide strong pathways into both from high school.

Two related questions were aligned with this goal:

1. Whether students are beginning to think about the type of University or College program they might want to attend to pursue a STEM career (Options-based, careers and pathways preamble).

2. Whether students feel their teachers are preparing them to be successful in future University or College programs focused on STEM fields.

Thinking about post-secondary STEM pathways (Q12):

- Across Grades 7–10, 70% of students responded Yes, indicating they are beginning to think about what type of post-secondary program they might pursue after Grade 12 to prepare for an exciting STEM career.
- 27% responded No, and a small percentage selected "I don't understand the question."

By grade, awareness and planning increase modestly with age, but even in Grade 7 there is strong early engagement with future pathways:

- Grade 7: 53 Yes, 26 No, 5 "I don't understand".
- Grades 8–10 show similar or higher Yes rates, with a particularly strong positive response in Grade 8 (89 Yes) and Grade 10 (36 Yes).

Perceptions of preparation for post-secondary STEM (Q11):

- Overall, 79% of students reported Yes, they believe their teachers are preparing them to be successful in STEM-focused post-secondary programs.
- 16% responded No, with the remainder unsure.

In Grade 7, 67 students said Yes, 12 said No, and 5 indicated they did not understand the question, again reflecting a strong early perception that the program is oriented toward future STEM study.

Interpretation

These findings indicate that a substantial majority of students are already thinking about STEM-related post-secondary pathways. A high percentage of students also feel their teachers are actively preparing them for success in such programs. This aligns with both the charter's specific goal and the school's collegiate mandate to provide clear and robust pathways into STEM based post-secondary and industry opportunities.

Insights:
Across all four charter goals, students report consistently strong perceptions of:

- enhanced STEM and technology learning (Goal 1),
- opportunities to develop high-level thinking and problem-solving skills (Goal 2), and
- early awareness of and orientation towards STEM post-secondary pathways (Goal 4).

Perceptions of resilience and socio-emotional development (Goal 3) are positive but more moderate, with about two-thirds of students reporting growth and nearly one-third not yet experiencing this as a constant in their STEM Collegiate experience thus far. This difference highlights an important area for continued strategic focus and provides a useful outcome metric for monitoring the impact of recent initiatives in behaviour support, leadership, and collaborative problem solving. Grade 7 students' responses broadly mirror those of older students, suggesting that the STEM-focused, pathway-oriented, problem-solving-rich learning environment is visible from students' first years at the school.

Limitations:

- The survey relies on self-reported perceptions rather than direct observation of classroom practice or longitudinal tracking of individual students.
- The Yes/No/I-don't-understand response format provides clear descriptive trends but limited nuance about *why* some students answered "No".
- A small but consistent group of students selected "I don't understand the question" on several items, indicating that some constructs (e.g., "resilience," "STEM skills") may need continued explanation in age-appropriate language.
- The data represent a single time point for these newly designed measures, though they can now serve as a baseline for tracking trends in future years.

Conclusion

Overall, the June 2025 student survey results provide systematic, student-voice evidence that STEM Collegiate is successfully implementing the STEM-intensive, problem-solving oriented, and post-secondary focused aspects of its charter (Goals 1, 2, and 4). At the same time, the findings indicate that progress on supporting students' resilience and broader socio-emotional goals (Goal 3) is meaningful but still developing, and that this area should remain a priority in the 2025–2028 Education Plan and in related professional learning and student support initiatives.