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### Science Skill Gains: Students' Perceptions of their Knowledge and Skills Acquired Upon Graduation

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## Title: Science Skill Gains: Students' Perceptions of their Knowledge and Skills Acquired Upon Graduation

The purpose of this research was to investigate how different teaching and learning approaches across science undergraduate degree programs influence students' perceptions of the knowledge and skills they acquired upon graduation. Graduating undergraduate science students completed the Science Students Skills Inventory (SSSI) [1] to capture their perceptions of their learning gains across their degree program. Specifically, students provided their perceptions of their level of improvement and confidence with nine graduate attributes: 1) acquisition, application and integration of knowledge; 2) research skills; 3) critical thinking and problem-solving skills; 4) literacy and numeracy skills; 5) responsible behaviour to self, others and society; 6) interpersonal and communication skills; 7) teamwork, and personal and group leadership skills; 8) creativity and aesthetic appreciation; 9) ability and desire for continuous learning. They also indicated the extent to which they felt these attributes were included in learning experiences and formally assessed. Generally, the majority of participants expressed improvements in all graduate attributes; however, fewer improvements were noted for creativity and aesthetic appreciation, which was also perceived as less frequently included in curricula, and students felt less confident in this area. Participants indicated that creativity and aesthetic appreciation, responsible behaviour to self, others and society and ability and desire for continuous were less often assessed throughout their degree program. This research provides initial perceptions from students related to learning gains across their degree program and will provide benchmarking data to inform the quality enhancement of curricula.

### References

1. Matthews, K. E., & Hodgson, Y. (2012). The science students skills inventory: Capturing graduate perceptions of their learning outcomes. *International Journal of Innovation in Science and Mathematics Education*, 20(1).