



Final report

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This project addressed issues faced by learners

University students have to learn in many different formats (e.g., lecture, online, blended, flipped, labs), often confront failure, and manage many different course and life expectations, including part-time jobs, clubs, sports, volunteer work, family (Figure 1). To be successful, students need to know and continually monitor their learning plus develop autonomy and professional capacity skills;¹ these are two Undergraduate Degree Level Expectations (UDLEs 5 and 6)² and are components of self-regulated learning.³ Currently, few programs, courses, and online resources address SRL skills or explicitly help students take control of their learning.

In this Chair in University Teaching project, Alison led a team that addressed the aforementioned issues by building a *Growth & Goals module* for learners that is adaptable to a variety of contexts (French, English, any discipline, any level, stand-alone or in-course). The module exceeds the standards outlined in the Accessibility for Ontarians with Disabilities Act and is an Open Education Resource that uses a Creative Commons Licence (CC-BY-NC-SA) and can be integrated in learning management systems or used independently.^{4,5}

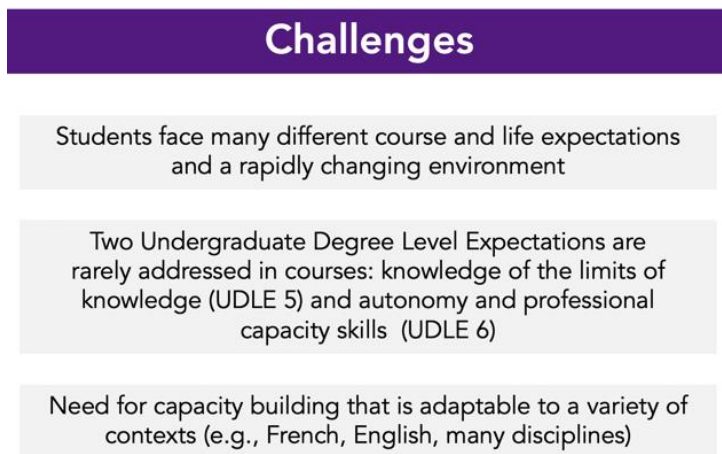


Figure 1. Learners in postsecondary environments face many challenges

What is the module?

The module is formed of a series of instructional text, videos, and interactive activities, shared through Google Drive documents and forms.⁶ Instructors can distribute the module sections to students via email, the institution's learning management system, a course website, or as hard-copies. A tour of the module is available in the following video (<https://youtu.be/-3qCtHiTgqg>) and on our website: <http://www.flynnresearchgroup.com/growthgoals> (Figure 2).



Figure 2. Tour of the module.

Within the module, students learn key concepts to help empower them to take greater control of their learning (Figure 3). The core concepts addressed are: self-regulated learning—including SMART goal setting (Specific, Measurable, Accountable, Reachable, and Time-specific), metacognition, and mindsets. These concepts are drawn from psychology and are described in detail on our website and reports.

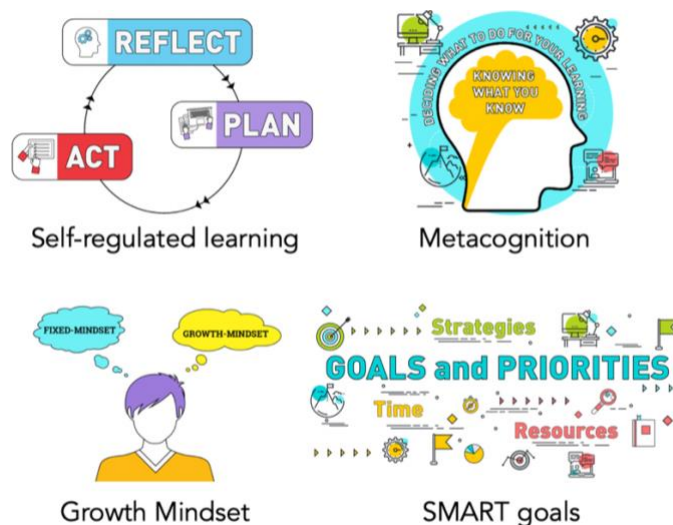


Figure 3. Students learn key concepts to take greater control of their learning.

The module is integrated with the course with components (theory and activities) at the start of the course, check-ins before and after midterm assessments (e.g., essays, midterm exams), before the final assessment (e.g., final exam), and a course wrap-up activity at the end of the course (Figure 4). In one of the key activities, students rate their abilities in the course’s intended learning outcomes, which they report to be one of the most useful aspects of the module.

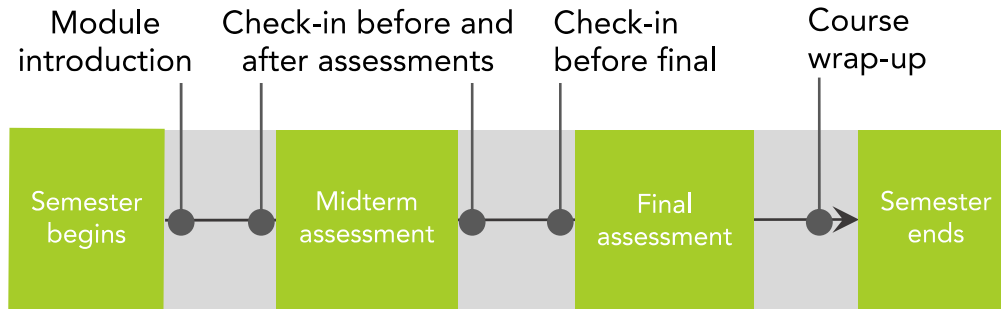


Figure 4. Timing of the Growth & Goals module's activities.

The module takes one to four hours to integrate into a course, with detailed instructions provided in text and video formats (Figure 5). The students' responses can be exported to a spreadsheet and uploaded to a learning management system's gradebook to become part of the course grades. The module can also be readily used again in future courses with minimal to no changes needed. Because the module's framework is provided, instructors have the choice of making minimal changes or making extensive changes as they see fit.



Figure 5. Integrating the module in a course.

The module's intended learning outcomes

The module's intended learning outcomes are addressed through the module's activities. By the end of the module, learners will be able to:

- 1) Use the concept of **self-regulated learning** and its associated 3-phase learning cycle to:
 - a) Describe self-regulated learning in your own words
 - b) Describe each of the three phases of the self-regulated learning cycle in your own words
 - c) Identify common myths about learning
 - d) Self-assess study habits and thinking
 - e) Rate personal feelings towards a course
- 2) Use the concept of **mindsets** to:
 - a) Describe a growth and fixed mindset in your own words
 - b) Identify growth and fixed mindset statements
 - c) Transform fixed mindset statements into growth mindset statements
 - d) Construct strategies to deal with failure and build resiliency (Note: this learning outcome is currently not addressed but will be added to the module)

- 3) Use **goal-setting skills** to:
 - a) Identify and construct SMART goals
 - b) Construct a personalized schedule for a university semester to achieve goals
 - c) Define and refine your priorities and use them to set your own goals for a course or personal endeavour
- 4) Use the concept of **metacognition** to:
 - a) Rate your current ability towards the course's learning outcomes and provide an explanation for your rating
 - b) Identify resources and strategies that you will use to reach your goals
 - c) Explain to what extent the skills from the module can be used in other settings
 - d) Apply skills from the Growth & Goals module to other courses and life challenges
 - e) Describe the course's intended learning outcomes in your own words

The module's evaluation was guided by key stakeholders

We are using a practical-participatory evaluation (P-PE) framework.^{7,8} In this framework, an evaluation team is formed of project stakeholders, including students, instructors, Teaching and Learning Support Service members, Student Academic Support Service representatives, administrators (Figure 6). Together, the team developed an evaluation framework, which involves developing the major evaluation questions, indicators, data sources, data collection methods, and bases of comparison.

We used the P-PE framework to allow us to bring in and value the voices of various stakeholders, with the intent that the results of the evaluation would be more meaningful, applicable, and result in a better end product. Katherine Moreau, a member of uOttawa's Faculty of Education and Centre for Research on Educational and Community Services (CRECS) joined the evaluation team and acted as a facilitator for the process. The project was deemed ethics exempt by uOttawa's Research Ethics Board, in accordance with Canada's Tri-Council Policy Statement: Ethical Conduct of Research Involving Humans, Section 2.5⁹.

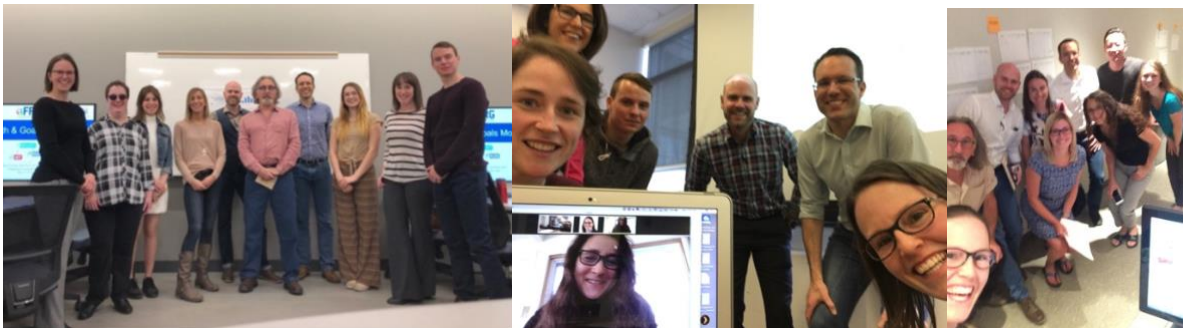


Figure 6. The evaluation team is formed of key stakeholders, including students.

By the numbers

- **10** students were involved in the project on the development and evaluation teams, including two research assistants, one honours student, two Undergraduate Research Opportunities Program (UROP) Students, three graduate students (two from the Faculty of Education and one from the Faculty of Science), and members of the Science Students' association (Figure 7).
- **Dozens** of students participated in focus groups starting even before the formal design process began.
- Over **3000** students have used the module in a wide range of disciplines including chemistry, education, mechanical engineering, calculus, and statistics.
- The module is being used in over **20** courses at least **5** institutions in Canada and the US. These numbers are considered underestimates since the use of Open Education Resources is not often reported.
- The module was **featured** in Open Education Week, 2019 and in Contact North's [Pockets of Innovation](#).
- Alison was **awarded** uOttawa's **Open Access Award**, in part for her work in this project. [Read more](#).
- The module is part of eCampusOntario's **Open Library**.¹⁰
- Our team gave **over 20** presentations at local, national, and international events and universities. At most events, the team also held workshops for educators who chose to incorporate the module into their courses.¹¹⁻¹⁴
- **Three** publications are submitted (2)^{15,16} or being written (1).¹⁷



Figure 7. Emily O'Connor and Kevin Roy were the two student leads for the project.

The evaluation findings have exceeded expectations to date

Data analysis is ongoing, but we know that participation rates in the module are excellent (>70%) when at least 1% bonus is added to the course grade for completing the module (Figure 8). We also know that students' metacognitive skills increase using their knowledge; specifically, they become more accurate rating their ability in the course's intended learning outcomes. The students speak highly of the module, believing it will improve their learning. For over 80% of students, this is the first time they have done such training. When we surveyed students one course later (after using the module), 97% were still using at least one of the module's main concepts (n = 43).¹⁷ Nevertheless, instructors who decide not to use the module despite thinking that it will help students better succeed report that biggest barrier is the time needed to incorporate the module in their course.

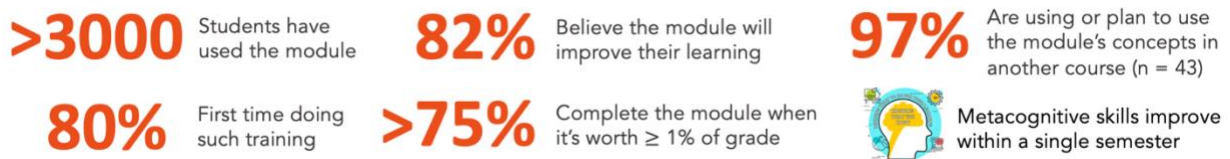


Figure 8. The evaluation findings to date are extremely positive.

Institutional support is needed to achieve the next level

The module has been so successful that we are aiming to take it to the next level in two ways. First, Alison has partnered with members of Trent University (Figure 9) to explore and incorporate additional core concepts including resilience (Robyne Hanley-Dafoe), mindfulness (Fergal O'Hagan), and Indigenous Knowledge (Mitchell Hugeunin). To accomplish these goals, we applied for and received funds from uOttawa for French language initiatives (2019). We will also be seeking funding from a Connection Grant through the Social Sciences and Humanities Research Council to better mobilize the module, which translates research findings from the social sciences into educational practice. We anticipate the next version of the module to be available by Spring 2020.



Second, we are hoping to bring the module to the program level, having received a number of requests from program directors and vice-deans (academic). To accomplish this transformation, we would need additional support (time and financial). We are currently exploring options and welcome any suggestions and offers of support.

Figure 9. Partnership with members of Trent University will lead to new components for the module.

Ways in which the module has been shared

Websites

- FlynnResearchGroup.com/GrowthGoals
 - Our website describes the module, provides instructions about how to incorporate it, and gives regular news updates
- eCampusOntario's Open Library: [Growth & Goals](#)
- Coming soon to [uOttawa's experiential learning](#) site

Publications

- An in-depth description of the module: "Growth & Goals: A course-integrated open education resource to help students increase learning skills" Submitted to the Canadian Journal for the Scholarship of Teaching and Learning, [Manuscript available here](#).
- A detailed report of our evaluation findings: O'Connor, E. K., Roy, K. & Flynn, A. B. Evaluation of a Growth & Goals module: what works, for whom? In preparation.
- Our infographic gives the key highlights about the project and is available in English and French [here](#) (Image and PDF available) and in Appendix 1.

Media

- Growth & Goals module featured during Open Education Week, 2019. <https://www.openeducationweek.org/resources/growth-goals-module>
- Growth & Goals module featured by Contact North: Judith Tobin. "Developing and Integrating an Open Educational Resource to Equip Students for Better Learning at the University of Ottawa, Ontario, Canada" Pockets of Innovation, Contact North | Contact Nord, February 4, 2019. <https://teachonline.ca/pockets-innovation/developing-and-integrating-open-educational-resource-equip-students-better-learning-university>

Presentations and workshops

- Flynn, A. B. "Self-Regulated Learning: a project to create and evaluate two new SRL initiatives" Poster presented at the Kesarwani Conference, uOttawa, 2016.
- O'Connor, E. K., Roy, K. & Flynn, A. B. Hack your Success: A Self-Regulated Learning and Growth Mindset Module for post-secondary and beyond. Take an OER Home today. In *Society for Teaching and Learning in Higher Education Annual Conference*, Sherbrooke, QC, (2018).
- Flynn, A. B. "Hack Your Learning: A Self-Regulated learning and growth mindset module" Seminar and workshop in the Teaching and Learning Support Service Lecture Series, April 2018.
- Flynn, A. B. "Growth & Goals: A module to help students take greater ownership of their learning" Western University, London, Ontario, September 27, 2018.

- O'Connor, E. K., Roy, K. & Flynn, A. B. Growth & Goals Module: helping students improve lifelong learning skills. In *Distinguished Visiting Teaching Scholars* (Trent University, 2019).
- O'Connor, E. K., Roy, K. & Flynn, A. B. Growth & Goals Module: an Open Education Resource. In *Global Online Learning Summit* (2018).
- O'Connor, E., Roy, K., & Flynn, A. B., "Growth & Goals: Come for lunch, leave with a new Growth & Goals module ready for any course" uOttawa TLSS Training and Events Program, Ottawa, ON, May 2019.
- Flynn, A. B. "Reshaping postsecondary science education to equip learners to address complex 21st century challenges" Global Young Academy. Lightning talk, Halle, Germany, May 2019.
- Flynn, A. B. "The potential of Open Education Resources" Kesarwani conference, University of Ottawa, Ottawa, ON, June 2019.
- Flynn, A. B. "Growth & Goals" **Keynote** seminar for incoming mentors at uOttawa. uOttawa, August 2019.
- Flynn, A. B. "Growth & Goals Module" Seminar presented at Trent University, October 2019.
- Flynn, A. B. "Growth & Goals Module" Seminar presented at the University of British Columbia—Okanagan, March 2020.
- Flynn, A. B. "Open Scholarship: steps, challenges, and opportunities" Presented at the Open Scholarship Award Ceremony, uOttawa, November 2019.
- Over 10 presentations to Departments, Vice-Deans, etc.

Conclusions

The Growth & Goals module is achieving its goal to empower learners with greater control of their learning and is positioned to reach even more learners in the near future. Without the University of Ottawa's support (Appendix 2), such an incredible project could never have been realized. Thank you to all who participated and contributed in every way!

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Appendix 1: Growth & Goals Module Infographic (EN and FR)



Growth & Goals Module Chair in University Teaching, Alison Flynn



Challenges

Students face many different course and life expectations and a rapidly changing environment

Two Undergraduate Degree Level Expectations are rarely addressed in courses: knowledge of the limits of knowledge (UDLE 5) and autonomy and professional capacity skills (UDLE 6)

Need for capacity building that is adaptable to a variety of contexts (e.g., French, English, many disciplines)

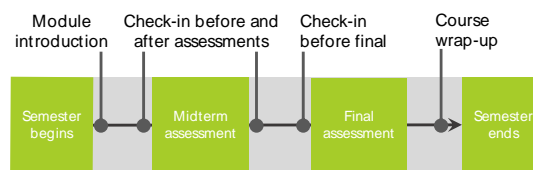
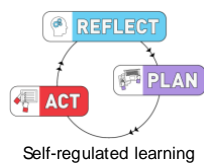
Approach: Growth & Goals Module

GROWTH & GOALS



An Open Education Resource (OER)

What is the module?



The module's success exceeds expectations

>3000 Students have used the module

82% Believe the module will improve their learning

97% Are using or plan to use the module's concepts in another course (n = 43)

80% First time doing such training

>75% Complete the module when it's worth $\geq 1\%$ of grade

Metacognitive skills improve within a single semester

6 Development team members, including students and uOttawa's Teaching and Learning Support Service

9 Evaluation team members

20 Presentations

>10 Courses in >5 institutions use the module, US & Canada

It was hard to write down things I wasn't good at. I'm glad I did, though, because later in the module I made a plan to improve those things.

I like that a growth mindset makes you realize that it's okay to make a mistake and fix it later on.

I used it more in other courses than this one, mostly the study techniques, like making a schedule.

When I put a zero for a learning outcome rating, that really made me think and work on that thing

Integrating the module in a course

1 - 4 hours
Adapt a template
No major course changes
Align with learning outcomes

Instructions and support provided

Results export to spreadsheet

Reuse in future years

Alison Flynn, FlynnResearchGroup.com/GrowthGoals | YouTube: [Growth and Goals Module](https://www.youtube.com/watch?v=...) | Twitter: [@GrowthAndGoals](https://twitter.com/GrowthAndGoals)

Défis

Les étudiant(e)s font face à plusieurs défis, incluant des situations d'apprentissage dans une variété de formats et la gestion de nombreuses attentes tant académiques que dans leur vie quotidienne

Deux attentes au niveau du premier cycle de grades universitaires sont rarement enseignées dans les cours: Conscience des limites de la connaissance (5) et Autonomie et capacité professionnelle (6)

Besoin de renforcement des capacités adaptable à divers contextes (p.ex., français, anglais, nombreuses disciplines)

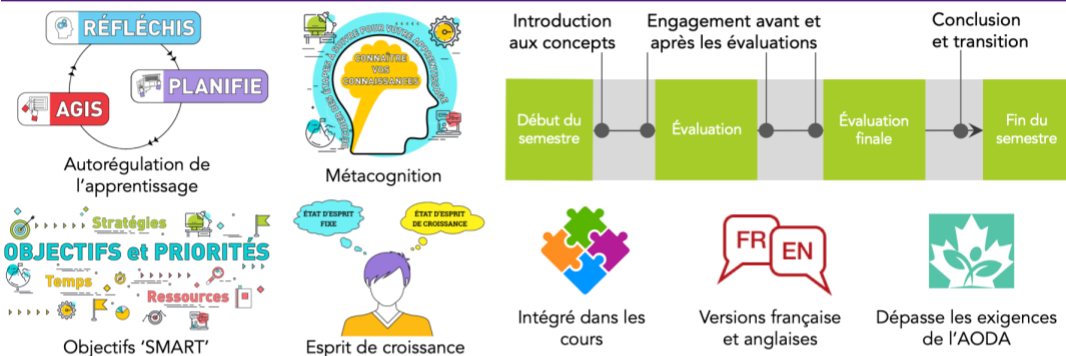
Module de croissance et d'objectifs

CROISSANCE et OBJECTIFS

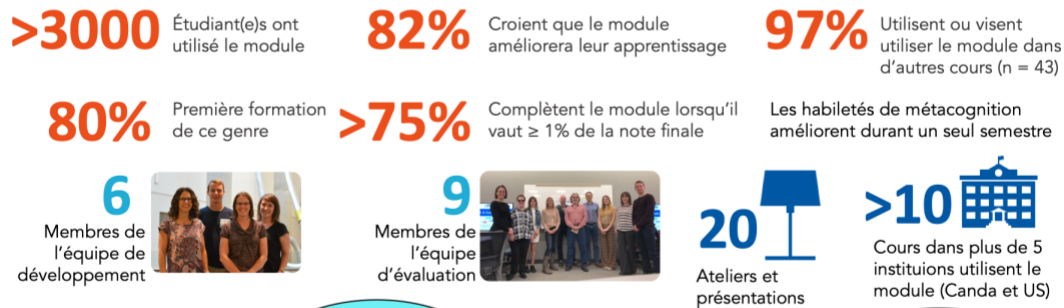


Une ressource éducative libre (REL)

Qu'est-ce que le module?



Le succès rapide dans la version pilote du module



Intégrer le module dans un cours

- 1 à 4 heures pour adapter le modèle existant
- Les instructions et des soutiens sont fournis
- Les résultats sont exportés
- Réutiliser dans les années futures

Alison Flynn, FlynnResearchGroup.com/GrowthGoals | YouTube: [Growth and Goals Module](https://www.youtube.com/watch?v=...) | Twitter: [@GrowthAndGoals](https://twitter.com/GrowthAndGoals)