ecampus Ontario

STUDENT-FACING LEARNING ANALYTICS

A blueprint for helping students help themselves with their learning data

Licensing: The document is licensed under Creative Commons BY-SA: the text can be shared and adapted, as long as attribution is made, changes are identified, and the information is shared under the same CC BY-SA license.

TABLE OF CONTENTS:

Executive Summary	3
Project Background, Goals and Process	6
The Value of Analytics to Drive Student Success	11
Student Viewpoints and Desire for Learning Analytics	20
High-Level Requirements for a Student-Facing Learning Analytics Tool	25
Blueprint for a Student-Facing Learning Analytics Tool	31
Appendix: Links and Tools	33

EXECUTIVE SUMMARY

Interest around learning analytics, particularly how learning analytics could be used by students, is on the rise. A 2018 survey funded by eCampusOntario indicated a high interest in learning analytics at Ontario post-secondary institutions, but found no sustained effort toward student-facing learning analytics.

With conversations happening about how administration and instructors might make use of student data, eCampusOntario determined that there was no time like the present to invite campus teams to participate in a series of co-design sprints to yield a student-facing learning analytics blueprint that member schools could use to make further progress in this area.

The blueprint that emerged from this process illuminates the path forward for a student-centred learning analytics platform that will help students help themselves with their learning data.

The essence of student-facing learning analytics is offering students themselves access to learning data that has previously only been accessed and used at the administrative level. By putting data in the hands of students, we give them the power to build behaviours that can lead to student success.

We designed this report to highlight student stories, student needs and student use cases. We flesh out those stories with additional information about data sources, nudges, reminders and resources students might be offered after detailing how a tool like this could work to impact students' lives.

What emerged from our work around student-facing learning analytics was clarity around student needs for analytics about their learning data, typical experiences that would trigger students to need analytics about their learning data, and how to help students help themselves with that data.

CONTRIBUTORS

FLEMING COLLEGE

ALANA CALLAN

Digital Learning Designer

JODIE BLACK

Teaching and Learning Specialist

LAURA GIBSON

Learning Strategist

ZOE KING

Student SME

QUEEN'S UNIVERSITY

NERISSA MULLIGAN, MASC, PEng

Assessment and Analytics Lead for Engineering Teaching and Learning Team

MARY BOUCHARD, MEd

CBME Implementation Lead, Ed. Tech. Unit

MEGHAN NORRIS, Ph.D.

Assistant Professor

MICHAEL NIVEN, BAH

Student SME

RYERSON UNIVERSITY

RESTIANI ANDRIATI, MSIS

Manager Digital Media Project

WENDY FREEMAN, Ph.D.

Interim Executive Director, Centre for Excellence in Learning and Teaching
Associate Professor, School of Professional Communication, Faculty of Communications and Design

JESSICA HUYNH

Student SME

CONTRIBUTORS, CONTINUED

UNIVERSITY OF WATERLOO

ANDREA CHAPPELL, MS

Director of Instructional Technologies and Media Services in Information Systems and Technology

NASIM SHOJAYI

Early Engagement Specialist in Student Success Office

ANDRI EFSTATHIOU, MEd

Academic Advisor in Faculty of Arts

SAGAR PATEL, Ph.D. CANDIDATE

Student SME

UNIVERSITY OF WESTERN ONTARIO

SHAWN FOSTER

eLearning Technology Specialist

BLAIR TREWARTHA

Instructional Designer

DEANNA GROGAN

eLearning Manager

LUIS (AJ) VELEZ RIZO

Student SME

PROJECT BACKGROUND, GOALS AND PROCESS

Interest around learning analytics, particularly how learning analytics could be used by students, is on the rise. A 2018 survey funded by eCampusOntario indicated a high interest in learning analytics at Ontario post-secondary institutions, but found no sustained effort toward student-facing learning analytics.

With conversations happening about how administration and instructors might make use of student data, eCampusOntario determined that there was no time like the present to invite campus teams to participate in a series of co-design sprints to yield a student-facing learning analytics blueprint that member schools could use to make further progress in this area.

This project was completed in two weekend sprints. We used a co-design approach and applied a Design Thinking model through the course of the sprints.

Co-Design approaches are one method of creating innovation testbeds. Through this co-design process, we used a Design Thinking approach at the two weekend sprints to engage students as subject matter experts (SMEs) along with cross-functional representatives from five different college and university campuses across Ontario.

Our goal was to create a a student-facing learning analytics blueprint that member schools could use to make further progress in this area.

INTRODUCTORY WORK

Values, Principles and Guiding Goals

Our work prior to the sprints set the tone and foundation for the rest of our work. We discussed, identified and clarified the values, principles and guiding goals around the project. The values, principles and guiding goals were made publicly available as part of the initial phase of this work.

Preparing Teams for the first Sprint

As our institutional teams prepared for the first Sprint, we talked about the purpose of Design Thinking. As part of this, we emphasized that students would be the centre of the conversation.

Preparing Student SMEs for the first Sprint

To prepare students for the first Sprint, we primed their imagination by asking them to think about key moments in their educational careers that changed their self-concept or inspired them to take their learning to the next level. Students led the way by presenting their stories on the first day.

PROJECT TIMELINE

ecampus Ontario Ontario

Student-Facing Learning Analytics Values, Principles and Guiding Goals

This document was developed by a working group of post-secondary representatives in Ontario. This is a living document, created to inform the high-level design of a Student-Facing Learning Analytics tool that empowers students to learn from, interpret and act on their own learning data in ways that improve learning experiences throughout their student life cycle.

Values

Student Agency	Students should be supported in building the capacity to act independently with available supports for their choices.
Holistic	The student experience should be captured and supported as an entire spectrum.
Inclusive	All students have value, and tools must account for the uniqueness of different student journeys.
Extensibility	Decisions and design should reflect up-to-date research and theory.

Principles

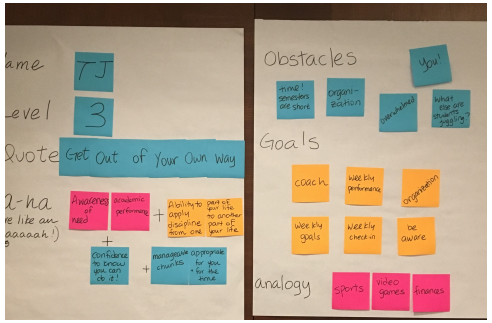
Transparency	Students will be informed of what data are being captured, measured and represented, as well as the purpose and limitations on how data will be used.
Consent	Data will be released to others only upon an informed opt-in consent by the student.
Equity	Processes, models and techniques of the technology will embody fairness and justice for all users.
Privacy	Data analysis and display technologies will comply with all relevant privacy laws and guidelines.

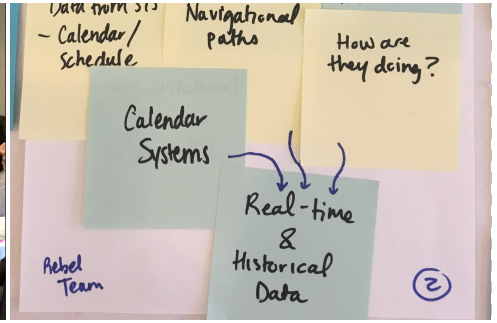
DECEMBER

After an informational webinar, we asked Ontario colleges and universities to submit Expressions of Interest to be considered to work on this project. After receiving five highly qualified Expressions of Interest, we selected all five teams to participate.

JANUARY

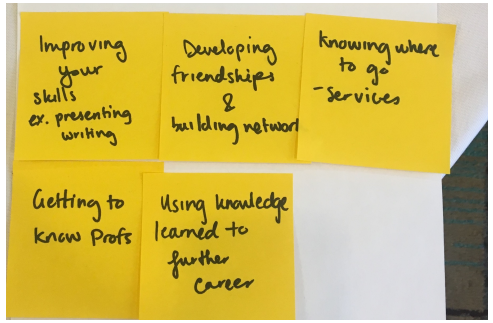
We first met as a team in early January. After aligning on project goals, we discussed our foundational assumptions in great detail. After a couple of in-depth discussions, we crystallized our discussion in the Values, Principles and Guiding Goals document excerpted in the graphic to the left.

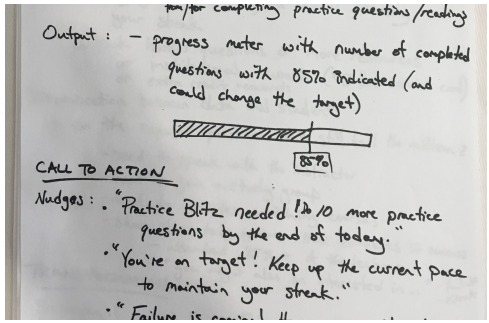




SECOND SPRINT

At our second Sprint weekend, we used a storytelling framework to help us identify steps in the student journey where learning analytics could help them become successful. We examined student stories related to course and program achievement, wellness, and identifying purpose, all of which helped to identify multiple entry points that might motivate a student to use a student-facing learning analytics tool.





FIRST SPRINT

At the first sprint, we worked through a Design Thinking process with a student from each campus team serving as a subject matter expert (SME). We immediately learned that students wanted more access to data about their program progress, about how their efforts impacted marks, and how they compared to other students.

After the first sprint, we asked our institutional teams to have informal conversations with more students to validate that our Student SMEs were representative of the desires and needs of the broader student populations at the respective institutions. The data from this validation step confirmed with what our Student SMEs shared.

WRAP UP

To wrap up their contribution to our work together, we offer this final report. Additionally, each contributor will be asked to provide feedback highlighting their thoughts on the process and how well this final report aligned with the Values, Principles and Guiding Goals document.

SPRINT 1 QUESTIONS AND PROMPTS

For each item below, Student SMEs shared a response in their own words.

UNDERSTAND & EMPATHIZE

Creating a student persona to get into the student mindset

- Create a fictitious student
- Quote to give a snapshot of what they care about.
- What are their big a-ha's?
- What obstacles do students experience?
- What are some big complaints?
- What do students want to achieve?
- How do they want to feel while they achieve it?

ENVISION & IDEATE

Brainstorming ideas that could meet students' unmet needs

- How do they see the problem?
- Do they even know they have a problem?
- How are they talking about the problem?
- How are they currently trying to solve the problem?
- What workarounds are they using?
- What is missing or incomplete?

BRAINSTORMING PROMPTS

Considering the problem from multiple perspectives

- How might we help students access many kinds of data in one place?
- What if it wasn't a dashboard?
- How might we help students understand, interpret and potentially act on data?
- How might we help students improve their own learning experiences?
- What if learning experiences were not the only thing students wanted to improve?
- How might we help students take ownership of their learning journeys?

SPRINT 2 PROMPTS

We presented a series of situations that emerged from Student SMEs along with feedback from the additional validation conversations with students. Institutional teams walked through a story framework with these prompts.

DATA PROMPTS

What is/are the **measure(s)** that will fulfill the goal?

What is/are the **data source(s)** containing the measures?

Is this data **complete**? What other data provides the **necessary context**?

How **"fresh"** does the data have to be?

Are inputs required for **comparison** (e.g. thresholds, targets, etc.)?

Are there any **other comparisons** required? (e.g. against other learners in section/course/program)

Have an eye to what the **output** could be.

THE VALUE OF ANALYTICS TO DRIVE STUDENT SUCCESS

This section outlines the value that a student-facing learning analytics tool could offer. Ultimately, students who participated in this project wanted data to help them move forward in many ways, thus there are multiple value propositions for a tool like this. We looked at those value propositions from a high level, and a model emerged that captures this value in a three-phase process.

Bringing to life the conceptual model that emerged from this project will help students analyze their current behaviours and results using data alongside comparative analytics. Reflective activities help students evaluate their results and potentially select new or different behaviours that might lead to improved results.

CONCEPTUAL MODEL

In the second sprint, we observed that the process students would go through for any of the user stories fleshed out later in this report followed a three-phase cycle. Beginning with behaviours that yield data, students would have access to data about those behaviours, then have the opportunity to reflect on that data and possibly revise those behaviours.

Thus, a “Behaviour Construction-Analytics-Reflection” model emerged. A student’s behaviour creates data from which reports and/or correlations between behaviour and performance might be drawn. Following this, a student would reflect on the analytics and have the chance to revise future behaviours based on conclusions they draw about the impact of their various behaviours on their academic success.

Those future behaviours would result in new data, and the cycle starts again.

Behaviour Construction

Student behaviours result in data in the LMS, SIS and other locations

Analytics

Present data, possible correlations with other data

Reflection

Correlations presented between tracked behaviours and academic success produce opportunities to reflect and modify future behaviours accordingly

ENTRY POINTS WILL VARY CAMPUS TO CAMPUS, STUDENT TO STUDENT

A theme heard throughout the project was the need for customization. Students wanted granular customization of notifications, and institutional teams noted the need for campus-level customization in terms of the resources offered to students.

Thus, each campus and/or faculty requires the ability to specify the entry points that will define what students will use this tool for. For some campuses, this tool will support student achievement. They may, for example, want to help students map their study time or activities to their course success. Other campuses may wish to visualize for students the effects that self-reported social activity or wellness has on academic achievement.

Regardless of how campuses customize the use of this tool, the outcome of the tool's use is still the same – to help students help themselves with their learning data, by aiding in the construction of behaviours that lead to outcomes students want.

BEHAVIOUR CONSTRUCTION

Building the kinds of behaviours, habits and patterns that lead to the success that the student had indicated as desired.

When students perform tasks with learning content in an LMS, that data is recorded. Likewise, when students enroll in courses, it leaves data in the SIS or CRM. This data is often aggregated and studied at the institutional level, but not available to students.

ANALYTICS

Data on achievement, skills growth, social & wellbeing is presented along with comparative data or correlations.

ACHIEVEMENT

Students we talked to wanted to view data that helped them pursue better marks and track the growth of their skills.

WELLBEING

We wanted a holistic treatment of the student, so data on social, emotional and mental health is important.

DIRECTION

Students we talked to wanted data to help with choices about careers and course selection from peers and advisors.

REFLECTION

Was I successful? Why or why not? Here are some different strategies, encouragement and options for help.

Reflection in this context can be as simple as responding to an offer for help based on data thresholds that each institution might set. Institutions who use this tool should be able to customize the resources offered to students.

Reflection could also mean capturing some sort of text response as a reflection on the data. A tool like this could capture this data to offer the student an overview of responses over time to help construct behaviours that lead to desired outcomes.

HOW THE CYCLE DRIVES STUDENT SUCCESS

Data is evidence of behaviour.

Students are not aware of what they might need to change without data.

Presenting students with their data makes them aware of where they could change.

Reflection gives students a chance to articulate a new intention or overcome obstacles to change.

Changed behaviour sets a new path for the student.

The changed behaviour leaves behind different data.

STUDENT VIEWPOINTS AND DESIRE FOR LEARNING ANALYTICS

Through this project, we kept students at the center. Their voice, their stories and their experiences guided the entire work.

Our Student SMEs and the other students who helped us validate our ideas agreed that they wanted more access to data and support for becoming the students they wanted to be.

Several key stories emerged:

- Wanting or needing to achieve a score in a course or across several courses
- Needing increased social connection in their courses
- Organizing time for their coursework
- Feeling like a student is on the right path in the face of progressive challenge

THE STORIES ARE FLESHED OUT ACCORDING TO THE THREE-PART CONCEPTUAL MODEL DESCRIBED IN THE PREVIOUS SECTION.

SUPPORTING ACHIEVEMENT

A tool programmed to support students in achieving their academic goals would present their data, and potentially comparative data, to help them track progress.

"AT THE END OF THE TERM, MANY STUDENTS I KNOW LIKE TO CALCULATE WHAT THEY NEED TO SCORE ON A FINAL EXAM TO ACHIEVE A CERTAIN MARK."

Behaviour Construction

A student generates a pattern of learning data as the student interacts with course content and submits course assignments or quizzes.

Analytics

Students see data describing current achievement compared to desired achievement. Students may also see correlations between achievement data and other data such as physical activity or study hours.

Reflection

With their learning data visualized, students can reflect on activities that led to success or actions they might want to take to be more successful. Students may also be presented with study tips, suggestions for study groups or tutorials. Students will be encouraged to change their behaviour to help achieve the goal the student sets.

I FEEL OVERWHELMED AND EMBARRASSED. IF I'M NOT GETTING 90'S, DO I EVEN BELONG HERE?

ENVISIONING THE FUTURE

When students meet progressive challenges, this tool can reassure them and equip them to meet these challenges with greater ease.

Behaviour Construction

A student may face the reality that their past study habits are not yielding the results that align with their identity as a student.

Analytics

Data can show the student's current performance compared to other students in their class and previous semesters of that class.

Reflection

The student would be encouraged to reflect on their performance relative to the performance of others. If desired, the student could be directed to advising, tutoring or other campus-level resources for support and guidance.

ENABLING CONNECTION

When students feel isolated or need connections within a course, this tool could match students needing connection with those offering connection.

Behaviour Construction

Students enrolled in a course could use a tool that uses algorithms to match students of similar level or major as course “buddies”.

Analytics

The same tool presents data that shows social activity related to the course, potentially input by students, and any correlation to increased feelings of wellbeing or changes in course performance.

Reflection

Presented with their analytics, students would be able to better understand the relationship between their social activity in a course and their achievement in that course. They can, therefore, make informed decisions about their future social activity in that course and in future courses.

IT CAN BE LONELY AND EMBARRASSING TO BE THE ONLY UPPER DIVISION STUDENT IN AN INTRODUCTORY COURSE, BUT YOU NEED TO REACH OUT

"I MEAN, IMAGINE IF WE HAD A CALENDAR THAT AUTOMATICALLY HAD ALL THE UPCOMING TESTS/EXAMS/FIELD TRIPS PRE-LOADED AND WITH EASY ACCESS. SOME MIGHT CALL IT LAZINESS FOR THE STUDENTS, BUT I CALL IT FOOLPROOF."

OVERLAID ON TOP OF AN ANALYTICS TOOL COULD BE AN AUTOMATED SEMESTER CALENDAR WITH TIME TRACKING METHODS TO HELP STUDENTS ORGANIZE THEIR TIME AND EFFORT.

Behaviour Construction

Course deadlines could be auto-populated, and students can add their work schedule, volunteering and club time.

Analytics

Data can help students see if they are investing adequate time into their studies and the impact their time has on performance.

Reflection

A student might be offered time management tips or calendar reminders to study. Reflections would be offered to help reinforce the value of time management strategies or to help them select alternative strategies if their current strategy is not working.

HIGH-LEVEL REQUIREMENTS FOR A STUDENT-FACING LEARNING ANALYTICS TOOL

As part of our work together, we did not directly define technical requirements for a software tool. However, a high-level list of requirements can be identified based on the feedback we consistently heard throughout our work together.

Throughout this Co-design process, we tried to brainstorm the ideal tool. We recognize the need for a blueprint that could be executed in the near term. Some requirements might become possible in the long-term future because needed data may not be collected or available now.

Following the MoSCoW framework for prioritizing requirements, we have listed a few of the “must have” features before releasing any tool, “should have” or “nice to have” features for the future, “could have” features to increase the usability of the tool and “won’t have” items. This is a high-level list. Institutions can use this list as a foundation for identifying additional requirements that may meet their unique institutional needs.

MUST-HAVES: MINIMUM REQUIREMENTS

Mo

- ❑ Integrate data from many existing sources that is aligned with what behaviours are being tracked (e.g. LMS, SIS)
- ❑ Deliver fully customizable data from many existing sources that is aligned with what behaviours are being tracked
- ❑ Institutions or faculties can define what will be tracked and therefore what behaviours the tool will help influence
- ❑ Allow for a full range of opt-ins and consent for the student
- ❑ Institution-, faculty- and course-level customizations for the kinds of resources that will be made available to students (e.g. tutoring, course-specific items)
- ❑ Potential to collect its own data (e.g. reflection tracking)
- ❑ Track and surface data within a term and across terms for a single course
- ❑ Deliver content to support revision of student behavior
- ❑ Fully accessible according to all applicable standards
- ❑ Trigger notifications based on data that is at, above, or below a threshold
- ❑ Deliver fully customizable notifications through a variety of methods (e.g. email, SMS, app badge notification)

REQUIREMENTS

SHOULD-HAVES: FUTURE REQUIREMENTS

S

- ❑ Track and surface data within a term and across terms for a program
- ❑ Calendaring tool and other high-level organizational supports
- ❑ Access to live chat or other support inside the tool

COULD-HAVES: INCREASING USABILITY

Co

- ❑ Integration with advising tools, “university 101” courses or other student success support mechanisms to allow for one-stop-shop access to all the things the institution offers students to help with student success
- ❑ Deliberate approach to potential integration with mental health support mechanisms at an institution

WON’T HAVE: NOT REQUIRED

W

- ❑ Administration-first audience for student data
- ❑ Employ “goals” as the only entry point for users

TO ENABLE AN ENVIRONMENT WHERE STUDENT-FACING LEARNING ANALYTICS CAN HELP STUDENTS THRIVE, WE LEAVE A LIST OF RECOMMENDATIONS.

At the conclusion of our work together, questions remained around some key areas of concern. Additional work at the institution level will be required if institutions want to use some of the should-have items in the requirements.

WE RECOMMEND THE FOLLOWING FOR FURTHER RESEARCH:

Our institutional teams included many faculty members and individuals with a keen interest in adhering to widely accepted, well-researched, evidence-based models for supporting students in their journeys. Additional research in these areas will help clarify and add value to this approach to student-facing learning analytics.

Additional research will enable buy-in from institutions who might be reluctant to adopt an unproven tool.

- Evidence-based models for supporting student achievement.
- Research and best practices for holistic student success approaches.
- Further investigation into student needs for data that supports the learning journey.

RESEARCH

WE RECOMMEND THE FOLLOWING IN RESPONSE TO RESOUNDING STUDENT DESIRES EMERGING FROM THIS PROJECT:

OUTCOMES MAPPNG

- Invest significant time and energy into mapping competencies that are to be achieved in each course and in programs as a whole.
- Invest in a tool that tracks competency achievement so data can be presented to the student.
- Tracking learning experiences from work, internships, co-op and extracurricular involvement.
- Deliberate choices about support for how competency achievement might flow into resume building.

Almost all students we talked with throughout this project, including our student SMEs and the students who provided additional validation after the first Sprint, resoundingly agreed that they wanted a way to track their progress through their curriculum or program. There is significant institution-level work that needs to be completed before this can be achieved.

UNIFIED APPROACHES

- A unified approach to defining data standards should be developed to ease visibility into a holistic view of the student.
- A consistent method for working with outcomes/ competencies to ease data architecture for a tool.
- Consistency in these processes would make it easy for learning outcomes/competencies to be machine readable, and then to align learning outcomes to assignments so students can see exactly what they have learned.

WE RECOMMEND THAT THERE BE A UNIFIED APPROACH TO THESE UNDERLYING SYSTEMS AND PROCESSES

Much of the data students want is available in existing systems today, but some is not currently collected or available. Data architecture varies widely, complicating any integration that would be created. Processes for developing, documenting, publishing and tracking course outcomes/competencies as well as program outcomes/competencies also vary widely. Consistent standards in data and outcomes tracking would support the ease of this tool's adoption and usage across institutions.

BLUEPRINT FOR A STUDENT-FACING LEARNING ANALYTICS TOOL

This blueprint is presented as a detailed model with prospective data sources.

eCampus Ontario
Student Facing Learning Analytics Blueprint

21.52m

1. Behaviour Contruction

3.17m

Wellbeing:
- Social Wellbeing and Interactions
- Physical Wellbeing
- Mental Health

Achievement:
- All Course Grades
- Program Requirements
- Skills / Competency Achievements

Direction & Planning:
- Course Assessment Due Dates
- Program Calendars
- Study Planning
- Social Event Planning

2.86m

2. Determine Where Your Data Is

2.92m

LMS:
- Course Grades
- Competency / Skills Achievements
- Competency / Skills Curriculum Maping
- Awards / Badges / Certificates
- Course Calendars (Activity Due Dates)
- Submission Dates (Assessments)

SIS:
- Academic Calendars
- Course / Program Requirements
- Historical Grades/Completion Records

Calendar Solitons:
- Students personal calendars: integrated data acquisition for study blocks, social events, etc. (if approved)

Advisory Systems:
- Various CRM Solutions
- In-House Systems

2.83m

Other Systems:
- Physical Activity Tracking Applications
- Social Networking Applications
- Mental Health Applications

REQUIRES USER APPROVAL

9.81m

3. Decide What Data You Need

2.92m

Course Progression:
- Individual Grades
- Final Grades
- Assessment Due Dates vs. Submission Date.
- Course Awards / Objectives Achived

Program Progression:
- View Course Progression Across All Current Courses for Program
- Look into Historical Courses

How is Wellbeing Effecting Progression / Performance:
- Physical Activity Levels / Frequency
- Engaged Socially?
- How Am I feeling?

Course and Program Requirements:
- Current Progression vs What is Expected / Required.

2.84m

Planned vs. Actual:
- Allocated Study Time.
- Allocated Social and Personal Time.
- Allocated Physical Activity Time.

3.93m

1.25m

14.56m

5. Analyze, Reflect, Adjust

9.80m

What skills am I acquiring from this course / all my courses?

Am I meeing all of my program requirements?

I am not doing so well in this course / program, what options do I have?

What other factors / events are effecting my performance?

Am I achieving the necessary grades to pass this course / all my courses?

I didn't do so well on that assignment, what else was going on and contributed?

4. Build Your Solution

2.76m

Data Export / Extraction Utilites:
- Data Exports from Sytems
- API Extraction
- Streaming (Event based) Data

Tranformation and Load Utilities:
- Pick up & Processing Exports
- API "Call Code" with Processing and Insertion
- Service Handlers to Process Streams

Data Warehousing Solution:
- Schemas Defined to Accept Incoming Data

Data Visualization Solutions:
- BI Tools Implemented and Dashboards Defined.
- Systems in Place for "Nudges" Definition and Send.

1.95m

21.39m

1. Behaviour Construction

Envisioned as a web-based configuration utility where students select what data is important to them, set thresholds or accept the recommended settings.

The spot where a student would opt in and set up connections to external data sources (pre-defined list).

2. Determine Where Your Data Is

LMS and SIS are common data sources and therefore will be immediatly available for use.

The others listed here are representational only. Feasibility as a source would have to be evaluated by the individual institution.

3. Decide What Data You Need

This section is where the questions seeking answers are formulated in as much detail as possible. Knowing the questions allows targetting specific sets of data to answer them.

4. Build Your Solution

Most, If not all solutions require that data be first extracted from the source. Then the data needs to be transformed from its native state into a format that is compatible with the data warehousing solution so it is queryable, and useable.

Once loaded into the data warehouse, visualization, or answering the questions, can be via Business Intelligence Tools or self-built web based applications

5. Analyze, Reflect, Adjust

Periodic "nudges" could be used for reminders, specific grade or engagement reflections. A dashboard could be used for the larger analysis and reflection.

REFERENCES, LINKS AND TOOLS

Through the course of our work together, we reference many ideas, tools and websites.

This section lists many of those links.

PROJECT LINKS

Student-Facing Learning Analytics Enviromental Scan

Najafi, H., Harrison, L., Geraghty, C., Evans, G., Liu, Q., & Yantz., G. (2020). Learning analytics in Ontario post-secondary institutions: An environmental scan [Research report].

https://www.ecampusontario.ca/wp-content/uploads/2020/03/2019-03-27-learning-analytics-scan-en.pdf

Student-Facing Learning Analytics Values, Principles and Guiding Goals

Our working group's initial deliverable that set the tone for this project.

https://www.ecampusontario.ca/wp-content/uploads/2020/02/2020-02-12-learning-analytics-framework.pdf

Advancing an Educational Technology Shared Services Strategy for Ontario: Province-wide Consultation Phase

Survey that sparked this work.

https://www.ecampusontario.ca/wp-content/uploads/2020/02/2020-02-12-learning-analytics-framework.pdf

EdTech Testbeds: Models for improving evidence

Article describing the Co-design approach.

https://www.nesta.org.uk/report/edtech-testbeds/

LEARNING ANALYTICS RESOURCES

Elements of Analytics Success

https://teach.uiowa.edu/student-success-using-learning-analytics

Student-Facing Learning Analytics projects

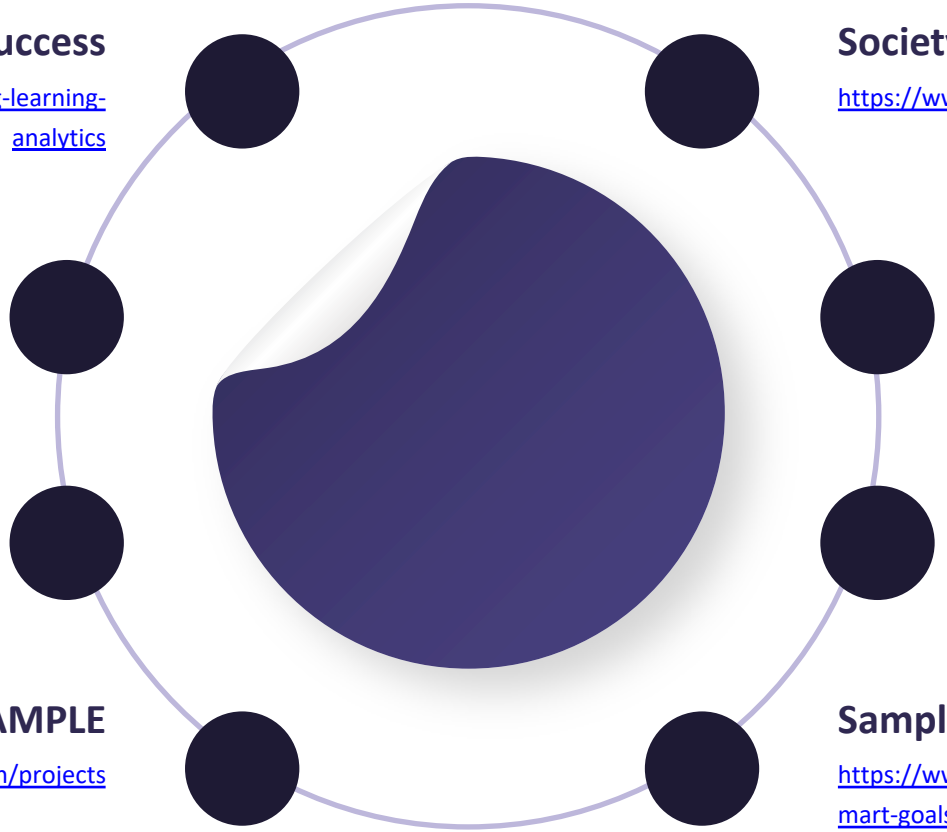
https://sflaprinciples.wordpress.com/

Prototyped dashboards

https://ammienoot.com/learning-analytics/ec-tel-2018-student-facing-learning-analytics-dashboards/

NYU LEARN – AN EXAMPLE

https://research.steinhardt.nyu.edu/learn/projects



Society for Learning Analytics Research

https://www.solaresearch.org/

Converting Student Goals into SMART Goals

http://www.flynnresearchgroup.com/

Self-Regulation through Goal Setting

https://www.ericdigests.org/2002-4/goal.html

Sample Student Goals

https://www.aiuniv.edu/degrees/business/articles/smart-goals-for-college-students

TOOL LINKS

MoSCoW framework for prioritizing software requirements

https://www.interaction-design.org/literature/article/making-your-ux-life-easier-with-the-moscow

IDEO

What is Design Thinking?

https://www.ideou.com/blogs/inspiration/what-is-design-thinking

Storybrand by Donald Miller

https://www.mystorybrand.com/

User Experience Case Studies we used as inspiration

https://usabilitygeek.com/ux-case-study-duolingo/ , https://usabilitygeek.com/ux-case-study-calm-mobile-app/

ecampus Ontario

STUDENT-FACING LEARNING ANALYTICS

Work performed December 2019-March 2020

Licensing: The document is licensed under Creative Commons BY-SA: the text can be shared and adapted, as long as attribution is made, changes are identified, and the information is shared under the same CC BY-SA license.