TLEF Project – Final Report

Report Completion Date: (2022/03/27)

1. PROJECT OVERVIEW

1.1. General Information

Project Title:	Establishing a Cloud-based Learning Resource for Business Analytics
Principal Investigator:	Harish Krishnan
Report Submitted By:	Harish Krishnan
Project Initiation Date:	April 2020
Project Completion Date:	December, 2021
Project Type:	☐ Large Transformation ☒ Small Innovation ☐ Flexible Learning ☐ Other: [please specify]

1.2. Project Focus Areas – *Please select all the areas that describe your project.*

☒ Resource development (e.g. learning materials, media)

☐ Infrastructure development (e.g. management tools, repositories, learning spaces)

☐ Pedagogies for student learning and/or engagement (e.g. active learning)

☐ Innovative assessments (e.g. two-stage exams, student peer-assessment)

☐ Teaching roles and training (e.g. teaching practice development, TA roles)

☒ Curriculum (e.g. program development/implementation, learning communities)

☐ Student experience outside the classroom (e.g. wellbeing, social inclusion)

☒ Experiential and work-integrated learning (e.g. co-op, community service learning)

☐ Indigenous-focused curricula and ways of knowing

☐ Diversity and inclusion in teaching and learning contexts

☒ Open educational resources

☐ Other: [please specify]

1.3. Final Project Summary

Our goal was to create open Business Analytics Learning Resources to enhance students' data analysis and meta-skills. The Business Analytics Learning Resource provides various hands-on experiences and experimentation activities grounded in 'real-life' data and business problems through open source and cloud-based tools (e.g. Jupyter notebooks).

1.4. Team Members – *Please fill in the following table and include **students**, undergraduate and/or graduate, who participated in your project.*

Name	Title/Affiliation	Responsibilities/Roles
Kemjika Ananaba	MBAN student	Content development
Hao Zheng	MBAN student	Content development
Charlie Cao	MBAN student	Content development
Vibhuti Dhingra	PhD student	Evaluation
Alison Myers	Research Analyst at Learning Services	Consultation on dashboard development
Sunah Cho	Faculty Liaison	Consultation on project progress
Elisabeth Chin/Sandra Wan	MBAN Program Manager	Project management
Liang Liu	Web designer (UBC undergraduate student)	Web design

1.5. Courses Reached – *Please fill in the following table with **past**, **current**, and **future** courses and sections (e.g. HIST 101, 002, 2017/2018, Sep) that have been/will be reached by your project, including courses not included in your original proposal (you may adapt this section to the context of your project as necessary).*

Course	Section	Academic Year	Term (Summer/Fall/Winter)
BABS 506	BA1	2020/21	Winter
BABS 507	BA1	2020/21	Winter
BAIT 508	BA1	2020/21	Winter
BAMS 506	BA1	2020/21	Winter
BASC 524	001	2020/21	Winter
BAMS 521	BA1	2021/22	Summer
BAMS 521	BA1	2021/22	Winter
BASC 500	BA1	2021/22	Winter
BASC 523	BA1	2021/22	Winter

2. OUTPUTS AND/OR PRODUCTS

2.1. *Please **list** project outputs and/or products (e.g. resources, infrastructure, new courses/programs). Indicate the current location of such products and provide a URL if applicable.*

Product(s)/Achievement(s):	Location:
Project website (Analytics at Sauder)	https://analytics-at-sauder.netlify.app/
Sharing project stories through multiple channels	TLEF website, UBC Strategic Plan website, Sauder Hub, Harish's LinkedIn page https://tlef.ubc.ca/stories/building-a-community-in-business-analytics/

2.2. Item(s) Not Met – *Please list intended project outputs and/or products that were not attained and the reason(s) for this.*

Item(s) Not Met:	Reason:
Courses reached by this project	Due to the COVID-19 pandemic, the increased workload for instructors was something our team considered. Therefore, we did not introduce this resource to other students (BCOM, MBA) at Sauder.

3. PROJECT IMPACT

3.1. Project Impact Areas – *Please select all the areas where your project made an impact.*

☒ Student learning and knowledge

☒ Student engagement and attitudes

☐ Instructional team-teaching practice and satisfaction

☐ Student wellbeing, social inclusion

☐ Awareness and capacity around strategic areas (indigenous, equity and diversity)

☐ Unit operations and processes

☐ Other: [please specify]

3.2. What were you hoping to change or where were you hoping to see an impact with this project? – *Please describe the intended <u>benefits of the project</u> for students, TAs, instructors and/or community members.*

Students: We hoped that the creation of the learning resources (Analytics at Sauder) creates an opportunity for students to develop practical and meta-skills. Also, Analytics at Sauder provides a platform for knowledge translation and knowledge transfer to the workplace. Analytics at Sauder provides an opportunity for connection between MBAN students, faculty, program alumni, and prospective students.

Instructors: Analytics at Sauder provides a resource that could be used by our MBAN faculty for the purpose of teaching meta-skills to our MBAN students.

Student Contributors (3 MBAN students): As student contributors planned, curated a collection of open-source business analytics tools and resources, and carried out the majority of the project's content, their knowledge on business analytics improved from their engagement with content. Additionally, their leadership, communication, and problem-solving skills were enhanced by cooperating with other team members and instructors (the co-applicants).

3.3. Were these changes/impacts achieved? How do you know they occurred? – *How did you measure changes/impacts? (e.g. collected survey data, conducted focus groups/interviews, learning analytics, etc.) Describe what was learned from this process. You are encouraged to include copies of data collection tools (e.g. surveys and interview protocols) as well as graphical representations of data and/or scenarios or quotes to represent and illustrate key themes.*

Student Experience with Analytics at Sauder: A survey was conducted during my BAMS 521 course on June 14, 2021 to investigate students' experience with the resources. The survey was completed by 62 students (57 completed the full survey and 5 completed only one question). The survey results are attached.

According to the results, many students didn't access Analytics@Sauder. The survey was conducted right after the instructor (PA) piloted the project in his own class only. However, the survey results provided very useful information for the improvement of the resource. Based upon the feedback, we hired a new web designer to improve UX/UI.

3.4. Dissemination – *Please provide a list of <u>**past**</u> and <u>**upcoming**</u> scholarly activities (e.g. publications, presentations, invited talks, etc.) in which you or anyone from your team have shared information regarding this project. Be sure to include author names, presentation title, date, and presentation forum (e.g., journal, conference name, event).*

We planned to share the resources and experiences with other Sauder faculty members through the Food for Thought event (faculty-led event); however, many events for online teaching during the pandemic were priorities to our faculties. Our plan was postponed. However, we will include these resources into the additional resources for MBAN students and continue exploring opportunities to use these materials for class activities.

4. **TEACHING PRACTICES** – *Please indicate if **your** teaching practices or those of **others** have changed as a result of your project. If so, in what ways. Do you see these changes as sustainable over time? Why or why not?*

The project provides a series of learning resources that are relevant to the MBAN course content. Particularly, the notebook examples help students improve concept learning and foundational aspects of MBN courses and the world of analytics. Students can develop their technical and meta-skills alongside the assignments in their courses. When there is a limited amount of time in lectures to teach course material or develop student practical and meta-skills, Analytics@Sauder provides students with an alternative method/resource to refer to and explore further. The project outputs are sustainable as the learning resources will continue to be developed over the year and used by future MBAN cohorts as well as alumni and prospective students. I plan to use this resource in future MBAN classes in two ways: (1) I will use it to demonstrate certain concepts such as project management, and (2) I will also use it to encourage students to complete optional projects that can be added to the open repository. One of my colleagues, Steven Shechter, has also used notebooks on the site to demonstrate some concepts in his courses. Vibhuti Dhingra, who was a team member when she was a PhD student, and is now a faculty member at York University has also used a notebook from the repository in her class.

5. **PROJECT SUSTAINMENT** – *Please describe the sustainment strategy for the project components. How will this be sustained and potentially expanded (e.g. over the next five years). What challenges do you foresee for achieving the expected long-term impacts listed above?*

Although Analytics@Sauder is utilized as supplementary resources and are not mandatory, we expect the usage of materials to grow. We will ensure that Analytics@Sauder is sufficiently and appropriately disseminated by the MBAN instructors so that future students and alumni are aware of the resources and are given the option to use them if they desire.