A PILOT PROJECT TO MEASURE TEACHING FACULTY EDUCATIONAL LEADERSHIP CONTRIBUTIONS

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Abstract – Educational leadership (EL) is a term sometimes used to capture facets of teaching that extend outside of direct teaching activities within the classroom. At some institutions, engaging in EL is encouraged and, at some others it is a requirement for tenure and promotion. A method to document, categorize, and assess engagement with EL is therefore needed. In this work, the Universitas 21 Conceptual Framework for Teaching was adapted to create a concise and quick-to-assess summary of EL activity. This paper describes the concept behind the EL reporting and assessment framework created, and comments on the process and outcomes from its deployment in practice in an engineering context.

Keywords: Educational leadership, teaching stream, teaching roles, career trajectory, assessing impact.

1. INTRODUCTION

There has been a pronounced increase in teaching-focused positions at Canadian universities (for example as reported by “The Globe and Mail” in a 2015 study of 40 universities [1]). In many institutions, these positions focus on teaching only or teaching and service, but there are others with a small research component expected to include scholarship of teaching [2]. Some institutions have gone further to embrace tenure-track teaching-focused positions that require contributions in education leadership (EL). EL is an evolving area that goes includes not just scholarship of teaching, but other areas of impact. At the University of British Columbia (UBC) the following definition of EL is widely used and appears in the Collective Agreement[3]

Educational leadership is activity taken at UBC and elsewhere to advance innovation in teaching and learning with impact beyond one’s classroom.

The UBC Collective Agreement includes the list of EL examples shown in Fig. 1 (and notes that this is not an exclusive list).

- Application of and/or active engagement in the scholarship of teaching and learning.
- Significant contributions to curriculum development, curriculum renewal, course design, new assessment models, pedagogical innovation and other initiatives that extend beyond the member’s classroom and advance the University’s ability to excel in its teaching and learning mandates.
- Teaching, mentorship and inspiration of colleagues.
- Formal educational leadership responsibility within Department/Program/Faculty.
- Organization of and contributions to conferences, programs, symposia, workshops and other educational events on teaching and learning locally, nationally and internationally.
- Contributions to the theory and practice of teaching and learning, including publications such as textbooks, print and electronic publications, book chapters, articles in peer-reviewed and professional journals, conference proceedings, software, training guidelines, instructional manuals or other resources.
- Other activities that support evidence-based educational excellence, leadership and impact within and beyond the University.

Fig. 1. Examples of educational leadership from the UBC collective agreement [3]

While EL is not engineering-specific, the relevance of this work and the evolution in EL towards engineering education is evidenced by the work of Brennan et al.; looking at participation the primary engineering education conference in Canada from 2004 to 2017 (i.e., CEEA-ACEG and its predecessors) they found a growth rate of roughly 8 papers per year, and an increase of approximately 2% per year in the proportion of theory papers versus practice papers.[4] Further, Nelson and Brennan showed the majority of engineering faculty...
engage in service activities that broadly fall under EL (67% on curriculum design and review, 66% in administration, 58% on accreditation, and 47% on evidence assessment). In short, represents an important and growing aspect of work for engineering faculty members.

1.1. Motivation

This work was primarily motivated by the need to be able to report, categorize, and assess engagement in EL activities for engineering faculty. Specifically, this work is centred on annual reviews for faculty with a focus on teaching and EL in the Department of Mechanical Engineering at UBC. The authors were tasked by their department head with developing a system to assess engagement with EL for each faculty member such that the head could adjust their teaching load accordingly. EL faculty in the department are given teaching release up to one 70-student course to offset the EL work they take on; this is done in accordance with the teaching load guidelines in the department, which requires classifying the EL engagement for each EL faculty member into one of three categories: “classroom-focused,” “demonstrated,” or “substantial.”

A secondary motivation of this work was to help inform other faculty members in the department about EL. As the concept of EL is still a relatively new one at UBC, many faculty members are unclear on what constitutes EL, the scale of EL work taking place in the department, and the impacts of the EL work both within and outside the department.

Finally, although not a primary motivation from the outset, this work has evolved such that recent changes are motivated by a desire to improve aspects of mentorship and peer feedback, and to further enhance the collegial environment for this group of faculty members.

1.2. Background and Literature Review

The term “educational leadership” is not a universal one. The definition previously provided and expanded on through Fig. 1 is the most complete in the context of this paper. Others, such as Adams [6], use “educational leadership” to refer specifically to administrative leadership in an educational setting. Through extensive international collaboration, Universitas 21 (U21) created a framework for describing teaching in a way that effectively captures both in- and out-of-classroom contributions, and that framework forms the foundation for the work in this paper, as will be described in detail in Section 2.1.[7] The U21 framework and supporting documentation refer extensively to “leadership,” but not in a way that is synonymous with EL as has been described here.

Thinking of individual faculty members, especially those with a focus on teaching, the importance of the opportunity and time to engage in EL is captured by Darroch[8]:

Ensuring a satisfying career track for teaching-stream faculty includes crafting reasonable teaching loads and service expectations, as well as supporting the teaching-related research that is a nominal but crucial part of positions. But this requires time...

A 2018 study by Nelson and Brennan gives some sense of the engagement with EL-like activities in Canada; of 218 engineering educators surveyed, 3.2% identified engineering education as their primary area of research, and 47% indicated some level of involvement with engineering education research. Furthermore, the majority of respondents engaged in service-related activities that broadly fall under the description of EL, as was mentioned earlier. To this point, in consideration of the breadth of EL examples in Fig. 1, EL includes both activities traditionally thought of as teaching and those traditionally through of as service.

The opportunity for positions that focus on EL-like work varies by university in Canada; the snapshot of institutions below reveals some of the variety for the ways EL is manifested in engineering education:

- Guelph University: some tenure-track positions shift weight from research to teaching, with the research focusing on engineering education
- Queens University: similar to Guelph University adjusted-weight positions are used; the research contributions are primarily technical but still include engineering education research
- The University of British Columbia: a tenure-track “Professor of Teaching” stream considers contributions to teaching, EL, and service
- University of Ottawa and York University: tenure-track professorial positions exist or are in consideration, where the research focus is on engineering education research
- The University of Toronto: an un-tenured professorial stream with the designation “Teaching Stream” considers teaching, EL and/or achievement, ongoing pedagogical development, and service

There is a diversity of contexts and experiences for teaching-focused faculty at different institutions in Canada, as Bowness revealed...

1.3. Problem Definition

With the proliferation of teaching-focused and EL-based faculty positions in engineering programs—especially those involving scholarship of teaching and service activities related to things such as curriculum development, faculty training, and program administration—there is a need to be able to report and assess the scope and impact of this EL work being done.

At UBC “EL Stream” faculty members belong to a tenure track parallel to the research stream, with ranks of “assistant professor of teaching,” “associate professor of
teaching,” and (full) “professor of teaching.” Of central importance to this work, it is necessary to report, evaluate, and quantify the EL contributions of EL stream faculty members. Sufficient engagement and impact with EL activities are requirements for promotion and tenure, EL activities are considered during annual reviews for merit and other salary adjustments, and, as was discussed in Section 1.1, EL engagement is considered in the authors’ context when teaching loads are assigned.

In consideration of Fig. 1, the range of example activities used to describe EL is both broad and nebulous. This breadth of activities creates a challenge in assessing EL contributions, as does relative novelty of the EL stream and the fact that the stream has evolved since its inception; in contrast, the research stream has well-established performance expectations and assessment metrics, largely due to the fact that research is viewed relatively consistently across different institutions and has been for a long time. For these reasons, it was felt that the majority of research faculty and teaching faculty outside the EL stream in the authors’ department were not yet in a position to assess EL engagement. Furthermore, given there are now eight EL stream faculty members (seven at the time this work started), it was felt it would be too large a task to ask individuals from other departments or institutions to complete these annual EL assessments. The result was a need for a system for reporting and evaluating the EL contributions of EL stream faculty. Ideally, this system needed to also facilitate education of non-EL faculty in the department about EL and the EL work being undertaken, as well as engage EL faculty members in a spirit of mentorship and collegiality. Lastly, as these reviews occur in the middle of the academic term, any solution needed to be sensitive to the time and effort required to prepare documentation, to engage in peer assessment and review, and to coordinate the process.

1.4. Significance

This work details the development and application of a framework for assessing EL activities within an engineering department at a large Canadian university. It is based on an adaptation of the U21 Conceptual Framework for Teaching (described in Section 2), and provides insights based on the practical application of this adapted framework. In particular, this work highlights the process and effort required to implement this system, as well as challenges encountered.

2. METHODS AND OUTCOMES

In order to report, share, and assess EL contributions, an EL framework and reporting structure was developed. This framework was based directly on the U21 Conceptual Framework for Teaching [3], but adapted for our purposes and institutional context. As the process used to assess EL was ultimately the outcome of this work, this section describes both the process itself and the methods used to develop it.

2.1. Framework

The U21 framework describes teaching, including educational leadership, using two elements: the teaching dimension and the teaching role. The teaching dimension in the U21 framework uses four levels, shown in Table 1. The first level (Learning Facilitation) most closely corresponds to the classroom, and each successive level in the teaching dimension moves further from the classroom and into the broader educational community.

| Dimension               | Description                                                                 |
|-------------------------|-----------------------------------------------------------------------------|
| Learning Facilitation   | That dimension of teaching that involves engaging, challenging, scaffolding, supporting and providing students with feedback on their learning. |
| Educational Design      | That dimension of teaching that involves designing, developing & deploying resources, learning activities, support, and assessment tasks within physical and/or digital environments to enable and support learning. |
| Reflective Practice     | That dimension of teaching that involves the collection & analysis of data to inform ongoing efforts to assure and improve the quality of one’s teaching, learning & curricula. |
| Scholarly Practice      | That dimension of teaching that involves engaging in and with, and/or contributing to, the scholarship of teaching and learning (SOTL) through the dissemination of teaching approaches and/or enhancements. |

The second aspect of the framework is based on the teaching role, with three levels as described in Table 2. In this case, the levels move from one’s own teaching progressively to the institutional systems and conditions which support teaching.
Table 2: U21 Teaching Roles

| Role          | Description                                                                 |
|---------------|-----------------------------------------------------------------------------|
| Teacher       | Whose focus is on the work the individual does in any of these areas of teaching to facilitate and support the learning of their students. |
| Leader        | Whose focus is on the work the individual does to influence and support others to innovate or change their practice in any of these areas of teaching. |
| Manager       | Whose focus is on the work the individual does to create the organisational conditions necessary to enable and support learning and the development of teaching in any of these areas of teaching practice. |

Combining these two independent elements creates a 4×3 table that can be used to categorize teaching and EL activities (see Fig. 2). The initial focus for most newly-hired EL faculty is in the learning facilitation / teacher practitioner cell (❶ in the figure). Over time, EL activities are expected to include progressively more cells in the table in first the light and then the medium blue regions, but beyond that, there is no expectation of a “typical” career trajectory. Considering three (simplified) potential EL stream career trajectories,

- Path ❷ would tend to correspond to a someone with an emphasis on education research,
- Path ❸ would tend to correspond to someone whose primary responsibility was leading a program or to act in the capacity of an Associate Dean Teaching, or similar, and
- Path ❹ would tend to correspond to someone focusing on building teaching capacity or guiding curriculum development.

The three paths described are meant for illustration only as they grossly oversimplify the breadth of activities an EL faculty member might engage in. In reality, contributions would be expected to fill portions of the table in more of a checkerboard fashion, where the regions of emphasis might align with one or more of the above paths.

The definition for EL at UBC, as was given in Section 1, specifically refers to EL as activities “with impact beyond one’s classroom.” In a somewhat simplified view, this framework captures EL activity through everything the eleven cells of the table outside the top left cell (❶).

2.2. Reporting form

We adapted the U21 framework to a single letter-sized page reporting form, similar to that shown in Fig. 3. (The intent in the figure is to highlight the features and overall layout of the form; the text is not intended to be read.) The use of a single page was done for three key reasons: to keep the EL form concise and faster to review; to avoid any perception that the amount or quality of EL work represented being in proportion to the size of the table or number of pages used in the EL form; and to encourage EL stream faculty members to reflect on their activities and judiciously select only those they felt were most significant to fit on one page.

There are several important features on the EL form:

- There is a header (❶ in Fig. 3) that includes some basic information on the individual completing it. Importantly the form includes not only the individual’s self-assessed EL rating (classroom-focused, demonstrated, or substantial), but also the EL level they would prefer to be at. This was felt to be important for giving targeted constructive feedback to help peers reach their goals. Also included are details on the individual’s teaching load to help contextualize the possible time available to engage in EL activities.
- Each of the 12 cells from the U21 framework are divided in two (❷) so as to report both EL work that has occurred over the past year, as well as planned EL work for the next year. This is important for both constructive peer feedback as...
well as for ensuring that teaching assignments accommodate future plans for EL activity.

- EL faculty preparing their forms are encouraged to use a bold red font to highlight and draw attention to what they feel are their most significant contributions (3). Similarly, a blue italicised font is used to report EL activities for which teaching release has already been given (4); in this way the form serves as a complete picture of EL contributions, yet it is still usable for determining incremental teaching release beyond that already provided.

- The reverse side of the form (not shown) contains a brief summary of the four teaching dimensions and three teaching roles with the U21 framework. This serves as a reminder to EL faculty preparing or reviewing the forms, but is mainly intended as a reference and opportunity to educate non-EL faculty about EL.

The same completed form was designed to be used in two or three different contexts. The primary use was in reporting and assessment of EL activities for the purpose of determining teaching load. In addition, EL faculty were optionally able to include the form with their annual reports used in determining department merit and salary adjustment. (In the department, a committee with rotating membership comprised of representatives from research, EL, and lecture faculty reviews annual reports; through this process it was felt that over time each faculty member would be exposed through these 1-page forms to the EL work taking place in the department, and thereby gain a deeper understanding for EL.) The final context was for each faculty member’s own benefit in understanding their EL contributions and planning for the future; by extension, faculty have the option to include their form with their teaching dossier or other similar materials.

2.3. Exemplars

To assist in developing a collective interpretation of the framework, and to provide a set of benchmarks to be used in preparing and evaluating forms, a set of exemplars were created. For each of the three ranks (assistant, associate, and full professor of teaching), three exemplars were developed representing the three possible levels of EL engagement used in determining teaching load (classroom-focused, demonstrated, and substantial). Sample exemplars are shown for the Associate Professor of Teaching rank in Fig. 4 to Fig. 6. The intent with the figures included here is not to show the specific details in each case, but rather to show the overall appearance of the forms and the progressive increase in content towards the bottom and right side of the form with more EL engagement. Notice also how even in the substantial category, there are still multiple blank cells.

For reference on each exemplar (i.e., not included on the EL forms prepared by the faculty members), several additional elements were provided to explain and justify why that exemplar received the rating it did. These elements included an estimate of approximate time and/or effort required in the stated activities, a discussion of the breadth of coverage of the table, the variety of activities engaged in, and the scale of impact outside the class and institution.
2.4. Timeline and Workflow

The process to develop this framework was a collaboration between all members of the EL stream in the Department of Mechanical Engineering at UBC. Substantial time was required, both synchronously through meetings and asynchronously through research, development work, and other communications. To give a sense of the scale of the work and of the workflow, an approximate timeline of key milestones in this work is provided in Table 3. The table represents one and a half academic years; the shaded portions relate to two cycles for determining teaching release for EL, while the unshaded portion relates to one use of the EL forms in annual reviews.

Table 3: Project timeline and key milestones

| Date       | Activity                              |
|------------|---------------------------------------|
| Dec 3, 2019| M Initial planning                     |
| Jan 13, 2020| M U21 framework adopted               |
| Jan 20, 2020| M Peer review process planning        |
| Feb 3, 2020 | M Peer review process finalized       |
| Feb 4, 2020 | E EL forms circulated for peer assessment |
| Feb 6, 2020 | E Peer assessment results finalized    |
| Mar 6, 2020 | M Inclusion of EL forms in annual reports |
| Apr 6, 2020 | E Creation of an interpretive statement on EL for merit |
| Apr 15, 2020| E Annual reports submitted (with or without EL forms) |
| Jan 8, 2021 | M Changes to process for 2021         |
| Jan 22, 2021| M Discuss new assessment process with associate head |
| Feb 1, 2021 | M Finalize new assessment process with head |
| Feb 4, 2021 | E EL forms circulated for review      |
| Feb 10, 2021| E Peer feedback returned              |
| Feb 15, 2021| E Revised EL forms and peer feedback provided to head |

There are several items of note in the above workflow. First, the large gap from the meeting regarding whether or not to include EL forms in annual reports (March 6, 2020) and the meeting to discuss changes for the current year (January 8, 2021) was in part due to the tension created within the group through this process; this will be discussed further in Section 3.2. Concerns about possible misinterpretation of EL forms by non-EL faculty during annual reviews for the determination of merit-based salary adjustments) inspired the creation of an “Interpretive Statement on Educational Leadership for Merit”; this was also seen as a way to educate non-EL faculty on EL, one of our secondary motivations in this work.

Not captured in the above workflow are four important aspects of this work. First, there was substantial email correspondence between the group in order to meet the timelines shown. This included frequent reminders at times to navigate periods with multiple events in a compressed schedule. Second, this work required the creation of an “EL Rep” position to organize meetings, to compile and distribute EL forms and the corresponding reviews, and to coordinate with department leadership. While each peer review was done anonymously, the EL Rep was in the unique position to have access to all reviews in order to distribute individually to each faculty member and collectively to the department head. It is unclear if knowing reviews would be accessible to the EL Rep had an impact on the quality, the forthrightness, or the tone of the reviews. The expectation is the EL Rep will rotate through the group on an annual basis. Third, on the point of coordination, for most meetings listed in Table 3 there was a corresponding informal meeting between the EL Rep and the department head. To provide more transparent communication and to minimize back-and-forth meetings, department leadership was brought directly into the process in 2021 through meetings with the associate head teaching and the department head. Fourth, the process of peer reviewing work was done through an online survey tool; through the survey each person anonymously reviewed either other person’s EL form as well as their own form. The self-review was included as a way to keep reviews anonymous to all, including the EL Rep who administered the survey and compiled the results.

3. DISCUSSION

Given the nature of this work, there are no results per se to discuss beyond the outcomes already presented. In this section, the impressions of the authors—that is, the creators and users of the framework discussed—are discussed in terms of perceived successes, challenges, and ongoing work.

3.1. Successes

In terms of successes, it is first worth mentioning that, within a relatively short timeframe, a functioning framework for documenting, categorizing, and assessing EL contributions was developed and deployed. It has now been used on four occasions, including twice for the primary purpose of determining teaching release to engage in EL activities and twice as an optional supplement with annual reviews for salary adjustment. Another significant success through this work has been the collaboration and engagement between the EL faculty in developing a framework, but more importantly discussing and working towards a shared understanding of EL. To this last point, this process has provided a mechanism through which each EL faculty member reviews and provides feedback to each other EL faculty member (something that would not have
happened otherwise). Through this process, the discussion of the importance of EL within the department and the contributions of EL faculty members has steadily grown, involving the head, two associate heads, and the faculty members on the annual review committee of seven faculty members (a representative mix of streams and ranks). Importantly, the annual review committee membership changes each year, exposing a growing proportion of non-EL stream faculty to this work.

3.2. Challenges

There are three significant challenges we have encountered during this process, the most significant of which is the tension created within our group during the assessment phase of this process. This is less of an issue with the framework itself and more a result of the challenge given to the group that peers be asked to develop and pilot a tool that was a deciding factor on teaching load, and could be perceived to have impact on merit and salary adjustments. To this last point, there was a debate within the group whether or not to include or allow EL forms with annual reviews, as some felt a disparity in EL work between individuals could be equated to a disparity in teaching and service (the two review criteria at the time). In the end, the EL forms were optionally included at the choice of each faculty member and the group drafted and circulated to the department an “Interpretive Statement on Educational Leadership for Merit” document. Still, the long delay noted in Table 3 between the end of activities in the 2019/20 pilot implementation of the framework and the 2020/21 implementation reflects the strain and discomfort created within the group as a result of the process.

The second challenge has been the work involved. To get to the point where we are now required over 50-person hours of meetings, and at least an equal amount of time spent researching, preparing EL forms, evaluating others’ forms, and so on.

Finally, there has been a learning curve to this process. We still do not have a consistent understanding of EL within the group, and there is not consistent categorization of EL activities by the different teaching dimensions and roles from the framework.

All three of these challenges lead to ongoing development work we have begun or plan to include this year, discussed next.

3.3. Ongoing Development

In response to some of the challenges above, this year we have revised the framework and the process by which we use it. Most significantly, we have communicated to the department head that some members of the EL stream group are not comfortable with the responsibility of determining others’ teaching loads. In response, we have agreed on a system where the EL stream faculty members complete peer reviews for the purpose of constructive feedback and fostering a thriving EL community in the department, but the head will be the one to make decisions regarding teaching load. The head will do this using each individual’s self-evaluation and the information provided on the EL form, along with the peer feedback comments. The EL Rep is intended to serve as a resource to the head for questions regarding EL.

This year, we streamlined the EL form slightly to focus on work completed over the past year and work planned for the next year. In the pilot year, each teaching dimension on the EL form included the work that was planned for the reporting year in addition to the work accomplished during the reporting year and work planned for the next year. We recognized it required extra time to do this reporting, and it increased time spent formatting the form and deciding what to include in order to make everything fit within the one-page maximum.

In terms of issues with a consistent understanding of EL and the use of the form, we are finding this is improving with each iteration. A frequent issue is work that should appear in the top-left cell (i.e., “learning facilitation-practitioner” work that does not extend outside one’s own course through mentoring, scholarship, or dissemination, for example) is appearing in other cells in the table. This is significant in that by the UBC interpretation, these activities do not constitute EL, and the group will need to continue to work to educate all members about what is and what is not EL.

Finally, we are still assessing whether the value of the form outweighs the effort required. Some of the EL faculty have proposed to do away with the form and give the same teaching release to all individuals regardless of engagement with EL as a way to simplify the process. On the positive side, this would reduce the time spent each year preparing and assessing peers’ EL forms; on the negative side, the opportunity for sharing and mentorship, as well as educating the broader department community about EL and the EL work being undertaken would be lost.

4. Conclusions

Overall, we have been successful in developing a framework to report and assess EL contributions of teaching-focused faculty members. Our framework is based on the Universitas 21 Conceptual Framework for Teaching, and the single-page annual report we have developed has been used now on three occasions. Substantial effort was required to adapt the Universitas 21 framework to our context and needs, and ongoing effort is required to generate and peer assess our EL forms annually. We have found the process of developing the framework, completing our own EL forms, and peer reviewing each other’s forms has been educational and valuable. However, using the outcomes of the peer review process towards determination of teaching load and determining whether to
include the EL forms on annual reviews for salary adjustment has created tension in the group. We are still working towards a collective understanding of what constitutes EL and the different dimensions it can take, but the development and use of the framework have accelerated this process.

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