Appendix D: Defining & Situating Student Learning

Over a series of meetings, the Student Learning Working Group discussed issues related to the student academic learning experience (teaching, research and learning synergies) and curriculum review. As a key framing point, the working group attempted to define learning as it related to the work of the group. This is followed by proposed graduate attributes, an inventory of curricular offerings, and details pertaining to proposed recommendations around the learning experience, environment and curriculum.

I. Student Learning

The work of William Perry (1970), a Harvard psychologist who documented cognitive growth in undergraduates and researched transformations that occur during the college years regarding the perception of knowledge, provides a foundational notion of student learning. Perry’s central epistemology about knowledge and learning triggers parallel shifts in the learner’s views about the role of the teacher—moving from an Authority as the source of “Truth” to an authority as a resource with specific expertise to share—as well as the role of the student, moving from a passive receptor of facts to an active agent in defining arguments and creating new knowledge (Moore, 2001). Perry’s perspective is an articulation of the goal of education, to provide opportunities for students to move from conceptually naive understanding of complex ideas combined with dependence on a teacher to the complexities and intricacies of defining new knowledge. Following on from Perry’s work, a small contingent of researchers in the UK, Sweden and Australia have conducted research on the topic of student learning over the past 30 years, focusing on aspects of the learning experience. From that foundation, the following definition of learning has emerged, that learning is a change from a naïve and undifferentiated understanding of a phenomenon or idea to a more differentiated and sophisticated understanding (Marton & Booth, 1998).

Understandings of curriculum and the way in which we learn have both changed significantly over the last half-century. There has been a shift away from a transmissive approach to teaching (where the teacher is the expert and the learner is the more or less passive recipient of information) to a more transactional approach to learning (where both teacher and learner are active in the construction of knowledge and meaning), and ultimately, in a few instances, to a transformative approach to learning (where the learner is critically reflective of their own assumptions, ultimately arriving at new insights supported through discourse). While each model is distinct in its focus and view of learning, there are also overlaps with respect to certain key strategies including the importance of guided reflection, the role of experience in the construction and re-construction of meaning, and the value of actively engaging the learner throughout the curricular process. Contemporary learning theories also remind us of the situated and social nature of learning, and underscore the important role the learning community plays in the process.

In Learning Reconsidered (Keeling, 2004) this notion of extending the learning experience beyond the classroom is explored in more detail. The authors propose a re-conceptualization of learning that defines it as a “comprehensive, holistic, transformative activity that integrates academic and student development processes”, which have traditionally, in the post-secondary context, been considered quite independent of each other. Given these definitions, teaching then becomes a much broader activity that includes the more traditional classroom-based approaches as well as outside of the classroom learning (e.g. field schools, co-operative education, case competitions, service learning, etc.)

In addition to foundational work on student learning, research and practice with undergraduates and the transformations that occur during students’ early years regarding their perceptions of knowledge and their developmental trajectories has been done by Boyer (1996). This work suggests that the integration of research on teaching and learning is one strategy that assists in deep student learning. There is also an emerging body of research on student satisfaction and retention, which focuses on creating engaging learning environments through better integration of curricular and co-curricular programs leading to an overall enhanced student
experience (Astin, 1993; Gardner, 2001; Kuh, 2003; Tinto, 2007). It is within this broadened concept of teaching and learning that the Student Learning Working Group’s recommendations were situated.

II. Graduate Attributes

**Recommendation #2**: Identify and promote a set of attributes that every SFU graduate should possess or be able to demonstrate.

Table 1. Ideal set of attributes acquired by students upon degree completion.

<table>
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<th>Attribute</th>
<th>Criteria</th>
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<tr>
<td>Depth &amp; Breadth of Knowledge</td>
<td>• Demonstrate excellence in academic disciplinary knowledge&lt;br&gt;• Know and apply in-depth knowledge and skills about one or more disciplines, as well as understand the connections among the disciplines&lt;br&gt;• Demonstrate a high level of analytical problem solving&lt;br&gt;• Demonstrate the ability to synthesize knowledge</td>
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<td>Knowledge of Methodologies</td>
<td>• Demonstrate knowledge of when and how to apply and interpret a variety of methods of inquiry (qualitative &amp; quantitative)&lt;br&gt;• Demonstrate the ability to recognize and frame an academic argument&lt;br&gt;• Demonstrate the ability to recognize when information is needed as part of the research process and/or the support of an academic argument, and be able to locate, evaluate and use effectively the needed information.</td>
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<td>Application of Knowledge</td>
<td>• Apply technical and information skills appropriate to their discipline or professional area&lt;br&gt;• Have participated in learning in situ, i.e. co-op, research assistant, community-based learning, field school, practicum, etc.&lt;br&gt;• Have participated in “internationalization” experience, i.e. exchange, field school, international research, international co-op, international mentorship, on campus international activities, etc.</td>
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<td>Communication Skills</td>
<td>• Demonstrate effective oral and written communication skills in a variety of settings (academic, professional, community)&lt;br&gt;• Demonstrate exemplary leadership and team skills through both academic projects and extracurricular activities&lt;br&gt;• Present well-reasoned arguments, using technology as appropriate</td>
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<td>Awareness of Limits of Knowledge</td>
<td>• Demonstrate an understanding of the value of their university experience as more than the acquisition of specific content and skills but rather as an experience that has taught them how to learn, question, evaluate, and apply new ideas and concepts to an ever-changing world&lt;br&gt;• Understand that a university degree is one stage in a life-long process of learning</td>
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<tr>
<td>Autonomy &amp; Professional Capacity</td>
<td>• Contribute effectively and appropriately to their discipline and their diverse communities as an engaged citizen with a sense of social responsibility&lt;br&gt;• Understand their personal values and how these apply to their goals and aspirations&lt;br&gt;• Use technology effectively and appropriately, and make informed conclusions and recommendations about its social impact</td>
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III. Inventory of Offerings

Requirements and pre-requisite structures

SFU takes a decentralized approach to the development and establishment of curriculum requirements. Departments develop proposals for new and revised requirements at the grass-roots level, and then forward these for approvals through Faculty and Senate committee structures. This process allows for department-specific course scaffolding and highly specified disciplinary content. However, there can sometimes be insufficient consideration given to content overload in individual courses and sets of course requirements, and to the need for more flexible and explicit pathways between disciplinary areas to benefit students’ interests and enhance interdisciplinarity.

WQB Requirements

Since Fall 2006, SFU students are required to complete specific writing, quantitative and breadth (WQB) requirements as part of their undergraduate degree requirements. The implementation of WQB marked the first major revision of SFU’s undergraduate requirements in twenty years, and the first introduction of some common course requirements across all SFU undergraduate degrees. The identification of these particular requirements was based on extensive feedback from all quarters of the university community, and marked an important step in the identification of core skills that graduates would acquire from an SFU undergraduate degree.

Foundational Academic Preparation

Another key component of the undergraduate curriculum requirements was the introduction of foundational courses in academic literacy and quantitative and analytic reasoning (FAL and FAN). The rationale for these courses was an acknowledgement that post-secondary work has specific preparatory requirements beyond what high school work might reasonably achieve, and, as a result, that SFU has an obligation to ensure that admitted students are explicitly prepared for work at the university level in relation to our specific expectations. Although not all students are required to complete the FAL and FAN courses, there are mechanisms in place to assess equivalency of preparedness at admission. The courses are now also utilized as part of the Student Success Program, in part because of the positive feedback from students.

Adoption of Technology and Alternative Pedagogies

SFU has invested significant resources in the infrastructure and supports necessary to engage in a wide range of e-learning and blended learning modalities. These are widely used for the delivery of on-campus and distance education courses. Additionally, there is great potential in and growing use of Web 2.0 and social networking strategies for educational outcomes, in courses and in co-curricular activities. Technological changes have also provided new and interesting tools for use in traditional classroom settings to introduce immediate feedback mechanisms and otherwise try to improve student engagement.

Experiential Learning

SFU offers students a wealth of experiential learning opportunities, some currently identified as such, and others not explicitly labeled but delivered using experiential learning models and pedagogies. SFU has an accredited and internationally recognized co-operative education program, administered from the Work Integrated Learning unit in Student Services. Through participation in co-op education, students gain valuable degree-related experiences and earn “additive” academic credit. Completion of co-op requirements is reflected on transcripts and degree parchments. In Engineering Science, co-op education is a requirement of the degree program.

Work Integrated Learning and Student Development additionally afford students opportunities to become involved in other forms of experiential learning, such as community-based learning, peer education, on- and off-
campus volunteering related to disciplinary interests, and leadership development. Programs such as Peer Educators, the LEAD program, and a variety of student development programs provide comprehensive training and experiences that focus on particular aspects of student learning and development. Such activities are not currently reflected on students’ university records, unless the activities take place via a course numbered practicum placement or other departmental curricular vehicle.

The Semester in Dialogue is a one-semester program allowing a cohort of students to engage in an intensive learning experience that uses dialogue to focus their education on selected public issues. Additionally, there are Faculties and departments that offer credit-bearing practicum courses, such as Education and Criminology. Such course work is an opportunity for integrated learning and for the application of theory to practice in a particular discipline.

**Internationalization**

SFU has a long-standing commitment to internationalization, realized through both on- and off-campus experiences. Students are able to participate in exchanges, field schools, and semester abroad programs, all for credit towards degree requirements.

Programming that involves immersion language learning, and other cultural and language acquisition experiences, is also growing at SFU. Examples of this include the Faculty of Applied Sciences dual degree program with Zhejiang University in China, and the French Cohort program in the Faculty of Applied Sciences.

Internationalization and international programming can also be an important form of experiential learning.

**Research**

Many undergraduate students seek out and access opportunities to engage in research as part of their university experience. This is most common for students registered in honors degree programs, but undergraduate research experiences also take place through research methodology courses, community-based research courses, work-study placements, research assistantships, and one-to-one arrangements between students and individual faculty members. The opportunity to participate in and learn more about how research is done is a unique advantage of attending a research-focused university, and the benefits for student learning are a clear fit with the attributes listed previously.

**Learning Supports**

SFU provides a range of complementary and supplemental supports to classroom-based learning. Some of these are centralized, such as services offered through the Student Learning Commons, the Library, and Student Services, and others are Faculty and department based, such as Math workshops, Faculty of Business Administration writing mentors, and Academics First, a tutoring program for scholar-athletes. Many faculty members integrate supplemental library and information research instruction and/or writing and learning strategies into course work, while some programs have sought more integrated partnerships with the Library and Student Learning Commons. Examples of this are the Academic Enhancement program in Computing Science, and TechOne. The Writing Intensive pedagogy adopted by SFU in 2004 is also relevant to discussion regarding learning supports, as the WI approach incorporates supplemental instruction on writing with discipline-specific course content into credit bearing courses.
IV. The Learning Experience, Environment & Curriculum: Recommendation Details

**Recommendation #3:** Ensure a student-centered focus by reviewing and defining learning outcomes across all levels of the curriculum (in class and out of class) with respect to SFU graduate attributes, to ensure curricular coherence and connectivity, and that syllabi for all courses include clearly-stated information about expectations and responsibilities of instructors and students.

- Articulate to all stakeholders, expectations for advancement and continuity within the program, and degree completion learning outcomes.
- Review and align as appropriate the extent to which each course is delivering content in a manner consistent with the way primary research is conducted in that discipline.
- Develop policy for regular critical review and articulation of program-centric course content to identify explicit learning outcomes (knowledge and skills) within each course, and program. Assess curriculum currency, content overload, and overlap, using both within unit and non-unit personnel.
- Develop strategies for pedagogy refreshment and facilitate the piloting of new approaches that harmonize course work with desired SFU graduate attributes. Encourage reflection on teaching & learning and research performance for all stakeholders.
- The university should explore adopting a model for advancement through an undergraduate degree (e.g. a 4-year plan) and ensure course availability for that stream.
- Know, serve, respect, and support the client as an active, responsible learner. Require reflection on course syllabus accuracy.
- Investigate merit in assigning accountability of individual course content (and syllabus) to the unit versus the individual.

**Recommendation #4:** Determine mechanisms to fully develop, recognize, and integrate research, experiential, and international learning opportunities into the curriculum.

- Investigate processes that may allow a unit to designate a percentage or number of experiential (E) or international (I) opportunities toward minimum degree completion requirements.
- Investigate mechanisms for quality assurance and regular review of E or I opportunities.
- Create policy that supports students who pursue an experiential and/or international concentration or emphasis, through completion of designated E or I learning opportunities.
- Explore the feasibility of integrating an explicit research requirement across all undergraduate degree programs (in addition to existing honors programs).
- Also explore the potential success of a competitive admission, research focused, small cohort, undergraduate research program that incorporates peer mentored learning while conducting primary research, with the objective of producing a sustainable, internationally recognized, undergraduate student research training environment.
- Investigate processes to identify students most likely to succeed in such a program, beyond those individuals entering SFU from, for example, the Shad Valley and IB programs.

**Recommendation #5:** Support the piloting of alternative approaches to interdisciplinary and theme-based learning opportunities, such as peer-group learning, clustered curriculum groupings across departments on topical issues, team-teaching approaches, first year experiences, and semester cohort groups.

- Explore sustainable, supplemental instruction for courses having historically difficult content (e.g. opportunities for ‘no-instructor present’ group learning).
- Advertise existing successes in interdisciplinary teaching, and facilitate new initiatives.
- Regularly, and critically review all extra-curricular programming (e.g. work study).
Recommendation #6: Review existing curriculum and learning opportunities to identify, expand, develop, and celebrate those features that facilitate student engagement, constructive feedback, early investment in learning, and effective mentoring.

- Review, celebrate, and promote (a) teaching and learning pedagogies that facilitate student engagement, and (b) sustainable mentoring platforms.
- Develop mechanisms for anonymous, constructive, feedback in a timely manner.
- Encourage each unit to develop their own culture for the support of all stakeholders in meeting university objectives, and invest early in all stakeholders for success.
- Investigate inclusion of, as appropriate, varied university supports (learning commons, career services, WQB expertise, teaching & learning support unit, orientation) into the curriculum. Regularly attend to and review the usage and effectiveness of features and make changes where needed.