The Student Learning Portfolio

A Report by the Learning Portfolio Working Group

Pauline Capelle
Philippa Carter
Ken Coley
Maria Daniel
Jennifer Fisher
Lori Goff
Laura Harrington
David Harris Smith
Tracey Jewiss
Gabriel Jeyasingham
Adam Kuhn
Betty Ann Levy
Mandeep Malik
Ashley Marshall
John Medcof
Aaron Schat
Jean Wilson

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Executive Summary

The learning portfolio (LP) has become one focus of a University-wide approach to enhance the student experience at McMaster University. The Working Group has articulated the purpose of the LP as a means to capture and enhance the learning journey of the students at McMaster. It will value and integrate an individual's entire McMaster experience and the variety of ways in which students can learn and develop. The LP will help students to plan, record, understand and develop on a personal and academic level throughout their learning journey at McMaster. By choosing to develop a LP, students will work towards a series of intended outcomes, including defining and refining individual learning goals, considering interdisciplinary perspectives, and integrating and applying the knowledge they gain through a variety of experiences.

The LP will facilitate this student development through its two components. The first is an online platform that will enable student tracking of and reflection on experiences. The online tool is also intended to introduce students to a variety of activities of potential interest. The second component will facilitate student development through mentorship and interdisciplinary perspectives, and could take a variety of forms, including a University-wide course. The Working Group has developed a model for this potential course in order to enhance student use of the LP, and has suggested a rubric that could be used for evaluation.

The development of the LP should be guided by a series of principles that include flexibility, student choice and participation, mentorship, integration and University-wide involvement. Implementation will require careful attention to the needs of both students and mentors, and a series of potential challenges have been outlined, including confidentiality and data security. The Student Success Centre (SSC) and Centre for Leadership in Learning (CLL) will play critical roles in the effective development and use of the LP.

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I. Introduction

McMaster University is committed to providing students with a learning experience that educates for capability and can guide students to meet and expand upon their individual learning goals. Capability, as described in *The Emerging Landscape,* extends beyond practical skills and knowledge to include continual growth as well as the ability to adapt, expand critical thinking, improve performance and generate new knowledge.[1]

The Learning Portfolio (LP) was introduced by the Student Experience Task Force as a potential vehicle to enhance the experience of undergraduate and graduate students at McMaster by serving as a tool for tracking experiences as well as a journal through which students can reflect on their personal learning journey within a wider community of undergraduate students and graduate/faculty mentors. More than just a record of student participation, the McMaster model will encourage deliberate thought and critical reflection, and integrate experiences both inside and outside of the classroom. We intend to introduce students to the wealth of opportunities that McMaster can provide that will enable both their learning and the growth of their academic and/or research oriented interests within and beyond their area of expertise; students will then have the flexibility to choose those experiences that will best enable their learning, personal development, and the direction of their academic interests and research. The LP is intended to guide the student to reflect on the learning that occurs during these activities and, ideally, to provide students with feedback on this reflection.

1. Purpose

The working group has articulated the purpose of the LP as follows:

> The LP will capture and enhance the learning journey of the students at McMaster. It will value and integrate an individual's entire McMaster experience and the variety of ways in which students can learn and develop. The LP will help students to plan, record, understand and develop on a personal and academic level throughout their learning journey at McMaster.

In order to develop a model that will suit this purpose, the group recommends that the LP have two components. The first is an online e-portfolio for tracking and recording intended outcomes, participation, reflection and feedback. The e-portfolio could also expose students to a range of research, networking, professionalization, and publically-oriented tools. The e-portfolio platform could be used in isolation or in combination with the second component, which is intended to provide support for the use of the online e-portfolio through mentorship and an interdisciplinary perspective. This could take the form of a University course or some alternative model.

2. Intended Outcomes

In this document, the Learning Portfolio, or LP, refers to the online e-portfolio and its supporting structure(s), and is intended to achieve a series of defined outcomes. Students who choose to participate in the LP will have:

- defined and refined intended individual learning outcomes, tracked their development towards achieving these outcomes, and developed means to demonstrate or articulate their intellectual curiosities and progression;
- considered the impact of their participation in interdisciplinary groups on their learning and development;
- been exposed to new learning opportunities and communities on and off campus;
- reflected on their experiences both on- and off-campus, including how they are interconnected with their academic, professional and personal development;
- recognized that the discovery of knowledge occurs during all of their experiences and can be integrated with the knowledge they gain through formal courses;
- applied this knowledge to new challenges or situations; and
- identified and discerned personal and alternative perspectives on an issue.

The development of the elements of the LP and surrounding framework to support these outcomes are outlined below. The working group has consulted the literature for guidance in the design of the LP, and some of the key findings can be found in Appendix I.

II. Framework

The McMaster model of an LP will be a *working document* that emphasizes progress in learning, which is distinct from a presentation portfolio (or co-curricular record) that is intended to summarize experiences or achievements. The LP will also guide students to define individual learning goals, and to seek feedback on their progress. By articulating intended outcomes and reasons for participating in courses and activities, students will be encouraged to take ownership of their learning and consider how their experiences can be integrated and potentially impact the direction of their academic interests and/or areas of research. Integrative knowledge and learning will facilitate the University's objective of educating for capability, as it will enhance student understanding of the connections between diverse experiences and allow them to apply this knowledge to new situations.

1. Learning Goals

An essential aspect of the LP will be to enable the students to define and refine their intended individual learning outcomes, both at McMaster and into the future. Students could refer to the undergraduate or graduate degree level expectations (DLEs) for guidance in establishing intended learning outcomes and could select areas in which to focus their individual development efforts and enhance their capability. Students will also be encouraged to identify goals beyond those articulated in the DLEs. Over time, the LP should show progress towards achieving individual learning outcomes, along with the development of new and potentially more challenging aspirations that would demonstrate evidence of continual growth and improved performance. Use of the degree level expectations as a guide for learning outcomes and as a target for student development will provide some structure for the LP, while allowing students the flexibility to select and modify the goals that best suit their needs and desired outcomes, ideally with support and guidance through mentorship.

2. Principles

In order to support these objectives and achieve the desired outcomes, the working group has articulated a series of principles to guide the development and use of the LP:

1. *Flexibility*: given the diversity within the student population and academic structures across Faculties within our institution, the LP must accommodate a variety of structures and uses. In all cases it should be driven by the interests and needs of the individual student.
2. *Student Driven*: The LP is a device to allow students to collect in one place evidence of their curricular and co-curricular activities. It will highlight their achievements and the reflections that guided their choices, both academic and non-academic, during their University development. The student's personal and academic development should be reflected in the sequence of entries over the developmental duration.
3. *Integrating Curricular and Co-Curricular*: An important aspect of the LP is helping the student to become aware of the integration of academic and non-academic learning, so personal, academic and professional growth supplement and complement each other. The aim is to make the student aware of the need for self-directed learning within and outside of the classroom. The LP aims to provide a framework for life-long learning and development.
4. *Mentorship*: Mentorship is a key component of the LP, and could be provided by both peers and advisors.
5. *Student Participation*: The long-term goal is to make the LP available to every student at McMaster. Individual choice is paramount and there may be students who choose not to participate in the LP. In the long run, if the LPs are well developed, supported, executed, supplemented with contemporary and effective technology, and are seen to be interesting and valuable, students will want to participate. However, it should be their choice and not a requirement. If faculty and students are convinced of the benefits of the LP and that it represents a distinct characteristic of a McMaster education, the institution will need to develop strategies so that all students may benefit from the LP.
6. *Faculty and Administrative Involvement*: It is critical that faculty, staff, and all levels of academic administration support the development of this new initiative. The structure and use of the LP may vary across units but availability to all students must be University-wide. Deans, Chairs and Directors must champion the development of the LP and encourage all of their students to participate.

III. Model

The working group has considered these principles and developed a potential model for the LP. The group feels that there should be a common approach to the LP across the University, with flexibility within the Faculties.

1. Components

As indicated above, it is desirable for the LP to have two components. The first is an electronic learning journal (e-portfolio) to be used as a tool in which students will document their intended learning outcomes, experiences and reflections. The LP could also include reflection on the prior learning experiences of the students: for example, how these experiences have informed their intended learning

outcomes and can be used to enrich their time at McMaster. This first element would be supported and enabled by the second component, which could be a three-unit course (pass/fail) that would span three of the student's years at the University. Students would register in the course and be placed into interdisciplinary teams of 10-12 students with a common mentor/advisor. The teams would meet regularly at the beginning of first year, and the format would be quite structured in order to give the students proper direction and guidance. In subsequent years, the frequency of the meetings would be reduced depending on the ongoing mentorship needs of the students. The course is one potential model for providing structure and support for the use of the e-portfolio component.

2. Interdisciplinary Teams

A critical feature of the LP is the formation of the interdisciplinary teams. These teams would broaden the student's exposure to the diversity of perspectives and wealth of knowledge that our students from different Faculties bring to our University. The teams would also provide a basis for an across-campus network of peers that would enlarge the student's learning community. The teams would help students develop skills in teamwork and effective communication, as well as find ways to prioritize, manage time, prepare a reflection and gain a broader perspective on personal or societal challenges and issues. Students would have the opportunity to discuss their intended learning outcomes, to identify activities that will enable their development, to receive feedback on their reflections and overall progress, and to consider their motivation for and anticipated outcomes from their University experience. Students could also identify goals that are common among members of the group, and potentially pursue projects or initiatives that could advance the team's collective goals. The LP would be used as a tool to coordinate and track activities, and as a platform for reflection for the students who would then share these experiences and reflections with the group. Mentoring/meetings could occur both digitally and face-to-face, and students would keep track of meetings with the team and others that contribute to or inform the learning experience. The deliverable at the end of the three years would be the evolving electronic journal, the achievement of the outcomes described above and exposure to a variety of digitally-enhanced learning, research, and communication tools.

3. Faculty Participation

Faculty members could participate in the learning portfolio in several ways: by facilitating a component or section of the proposed course, by serving as a mentor to students or overseeing an interdisciplinary team, or by using the online e-portfolio tool to communicate and share information with students in other University courses. Faculty members, whether participating in the proposed course component of the learning portfolio or not, would be offered tools and coaching to incorporate learning goals and reflection into their courses and to enable integration of in-class experiences with other student activities, so that the entire student experience would be captured in the e-portfolio. This participation could range from basic, in which activities that are already happening would be redirected through the e-portfolio component of the LP, to advanced, in which course-specific learning goals are defined, reflection becomes a component of the course, and marks are assigned for these components.

4. Mentorship

Guidance would also need to be provided to prospective mentors/advisors who are participating in the proposed 3-unit course component of the LP. This mentorship could be provided by peers, senior undergraduate students, graduate students, staff and/or faculty members. Student participation in mentorship should be encouraged and could potentially be included as a part of the LP as personal and professional development. In this way students will be contributing to the learning of others, and developing a community of learning among their peers. In addition, peer mentors with oversight from faculty members may be a model that minimizes the resource implications of mentorship.

5. Evaluation

Consideration must be given to assessing progress in order to assign a pass/fail grade to the course, if this is the model that is chosen for implementation. The working group recognizes that there are a number of components of the LP that could be assessed, and that formative feedback is a critical component for the ongoing development of the students. A curriculum development team will need to develop a course design, including the evaluation that will occur at various checkpoints during the course. A sample rubric for the reflection component of the LP is displayed in Appendix III.

IV. Potential Challenges

Consideration must also be given to barriers or challenges that could impact the implementation of a learning portfolio from the student perspective. The group recognizes that the proposed course component could be difficult to implement across the University, but feels that the e-portfolio tool would be widely used exclusive of the course.

Clarity of purpose

Students will require a detailed understanding of the purpose of the LP and examples that illustrate the variety of ways in which it can be used. Along with outlining the benefits to the students, articulating a goal and purpose for using the LP, as well as anticipated outcomes, will increase their willingness to participate.

Time commitment

Students may find the use of the LP (and reflection in particular) to be time consuming, which could add to their anxiety and stress, and force competition with other priorities. It will be important to demonstrate for students how this time investment will increase the value of their University experience, such as through validation by potential employers or through offering credit *via* a course, certificate or transcript notation. In addition, exposure to the LP will serve students well as this approach becomes integrated into University courses through instructor use of reflection and goal setting, and as an expected component of experiential opportunities.

Bureaucracy

In spite of clarifying the purpose and value, some students may find the LP to be a bureaucratic process with limited value that will not provide sufficient return for the students' investment of time and effort. One potential strategy to mitigate this issue would be to grade or validate the LP in some way as noted above.

Confidentiality and Security

The importance of confidentiality and security of personal information cannot be overstressed. The e-portfolio tool must be highly controlled by the student and confidentiality must be assured. Students should be able to decide which portions of the e-portfolio, if any, are made public or shared with other individuals or groups.

Feedback

In order for students to fully benefit from the LP, there must be a mechanism for regular feedback from mentors or advisors.

Simplicity

The simplicity of the technology platform, as well as the existence of features that allow students to personalize their LP, will be favoured by the students.

Faculty Participation

Along with the potential challenges from the student perspective, the LP also must be supported by faculty members at the institution. The primary challenge will be collecting a sufficient number of mentors among faculty members to support the student teams. It will also be critical to integrate the LP into existing and future courses at the institution, so that it becomes a characteristic of a McMaster education. Recognition of some form will be necessary to ensure participation. Senior leadership and support will be a critical factor in achieving buy-in from faculty members.

Mentorship

It will be a challenge to provide mentorship for all student participants. It will also be necessary to consider ways to ensure a relatively consistent mentorship experience for the students, as mentorship will likely be provided through a variety of means as a result of this capacity issue.

V. Graduate Student Involvement

Graduate students would benefit from use of the LP during their time at McMaster, and could also potentially participate as mentors for undergraduate teams, with sufficient training and guidance. The graduate student members of the working group have suggested that the LP could benefit the graduate students in several ways, which are outlined in Appendix II. It will be important to consider the time and resource implications of graduate student participation in mentorship, but the working group recommends that incentives be provided to stimulate this participation. It will also be necessary to consider potential labour issues that may arise as a result of graduate student involvement.

VI. Student Support

The Student Success Centre (SSC) can support student use of the LP in a variety of ways:

1. Creating Learning Outcomes

The SSC has experience in helping students set goals and also design intended personal learning outcomes. The SSC could develop new resources (videos, online, workshops) or share/modify existing resources to assist students in crafting intended learning outcomes that suit their areas of interest as defined in the context of their portfolio. In addition, the Centre for Leadership in Learning (CLL) has workshops as well as webinars that assist instructors with the development of student-focused learning outcomes for courses or sections of courses. These could be easily modified to target students in their process of designing their own learning outcomes.

2. Reflection

The SSC could assist in the development of resources to support reflection within the e-portfolio. The Centre uses reflection strategies in many programs to help students connect experiences to articulated learning outcomes. The SSC could develop new/share existing resources to:

a) Help students understand the importance of reflection and engaging in meta-cognitive self-assessment.
b) Provide students with frameworks to facilitate a strong reflective practice.
c) Help students appreciate that reflection should be considered part of an ongoing learning cycle rather than the conclusion of a learning process (i.e., next steps/action planning).

3. Recruiting Student Mentors

The SSC has a great deal of experience with regard to recruiting, selecting, training and honouring student leaders on campus. The Centre could be a resource to assist with this process should the e-portfolio include a component that includes mentorship from upper-year students.

4. Program Integration

The SSC runs many programs that are open to the entire student population. This includes high profile events such as Transition and Orientation events, Leadership Certificates and career events. As a central hub of student services, the SSC could integrate the e-portfolio themes into these programs and potentially act as a one-stop shop for concerns or issues related to on-campus involvement and engagement.

VII. Faculty Support

The Centre for Leadership in Learning (CLL) has experience in providing support and training to faculty members both in mentorship and in the use of educational technologies. A literature review and past experiences of CLL staff (Appendix IV) suggest that support can be provided in the following ways:

1. Mentorship

The Centre has the expertise to create faculty development programs and to facilitate, guide, and support faculty members and graduate students as mentors. This expertise can be used to develop a learning portfolio program that is aligned with best practices in mentorship. More specifically, the pedagogical team in the CLL can provide support through:

- Conducting research to determine faculty needs and interests.
- Developing programs and services designed to support instructors on an ongoing basis.
- Facilitating seminar and workshop series on teaching and learning topics.
- Supporting teaching and learning projects.
- Training individuals how to provide formative, constructive feedback.
- Individually consulting with faculty, staff, and graduate students on any teaching-related matter.
- Developing support guidebooks and resource materials on a variety of teaching topics.
- Working with faculty-wide and interdisciplinary curriculum development committees.

2. Use of Educational Technologies

Successful faculty training in the use of e-portfolios requires one-on-one availability of support staff to assist faculty through technological issues when necessary. CLL currently provides this service for their existing technologies and can provide support through:

- Large group, face-to-face training during the transition to e-portfolios, which would eventually be phased out and replaced with smaller group training, one-on-one support, with options for online or face-to-face delivery modes.
- Developing learning technologies training workshops to be offered in face-to-face, online, and one-on-one or small group consultation format.
- Monitoring the success of the training and support programs so that modifications can be made over time as appropriate.
- Mentorship training for individuals who are going to be mentors, as will faculty members who plan to use the e-portfolio in their courses (even if they themselves do not plan to be mentors). A two-stream training system may be one approach to addressing these two roles.

The CLL is well positioned with experience and expertise to develop and provide training and support in mentorship and the use of educational technologies; Appendix IV outlines additional details to support the development of these programs.

VIII. Communication

In order to be viewed as beneficial by the students, the LP must address the wide- ranging personal and individual needs of the student. The LP needs to be personally relevant and significant so that students will be willing to invest time and effort into its development; this approach promotes ownership in learning.

In order to effectively communicate the value of the LP to the undergraduate students, the connection to these personal needs must be made explicit, along with a list of accumulated outcomes that the LP

will deliver. We need to be clear about the "brand promise" of the LP, and realistic so that we will be able to meet (and hopefully exceed) the expectations of the students. We will need to generate awareness and interest about the LP, perhaps through sharing information gathered through the pilots, as well as word of mouth from students who participate. This participation could also be highlighted by requesting applications for participation, so that the LP pilots will be viewed as interesting, desirable and worth the competition. This approach could also be used to create the image of the LP as a valuable tool used by motivated students.

It will also be important to show connections with the world outside the University, perhaps through endorsements from potential employers, alumni who have used the LP, and community members. Student success stories should be shared and examples provided; this will be a short term objective, to focus on effective use of the LP at the University, as well as a longer term goal, as we wait for participants to complete their education at McMaster.

The name of the tool, though an important feature, should wait until the brand promise and image are understood so that it will best reflect the intentions of the LP. Working through the pilots and learning from these experiences will guide us toward a name that has meaning for the University and LP participants, as well as a communication strategy that will optimize interest and uptake.

IX. Implementation

Aspects of the LP will be piloted in select areas on campus early in 2013 in order to gather information about effectiveness and to gain student input. A larger scale pilot will be run in Fall 2013 or Winter 2014. Several groups on campus will be independently using the Avenue e-portfolio, and we should learn from their experiences and offer guidance so that their efforts can be leveraged towards a combined, University-wide approach.

An initiative of this magnitude requires oversight from a cross-Faculty team to ensure consistency in the experience of students, to continually monitor the evolution of the LP, and to oversee uniform introduction/implementation across the University.

X. Next Steps

The working group recommends the following as next stages in the development of a LP at McMaster:

1. Develop a common e-portfolio platform, either through the existing Avenue technology, or through an alternative source (e.g., OrgSync).
    a. If a new platform is selected, we will need to consider how it will interact with existing systems such as Mosaic (ERP) or Avenue, as well as the variety of tools and features that it provides and supports.
2. Consider alternative ways to provide mentorship, and pilot these methods (e.g., peer-peer mentoring, graduate student mentoring, faculty advisor mentoring). The resource implications of the proposed mentorship component are significant and should be investigated through the

pilot projects. An imaginative solution is required to address the significant mentorship capacity issue. It will also be important to maintain consistency in the mentorship experience, especially if diverse models are used for the LP at the University.

3. Consider how to launch the LP course, or develop an alternative model that would provide mentorship and interdisciplinary perspectives.
    a. If the course is selected as a potential model, we recommend the formation of a faculty curriculum development team that would develop the course design collectively following best practices, and establish a consistent approach and rubric that would be used for assessment. A sample rubric for reflection has been provided in Appendix III.
4. Develop a communication plan.
5. Gather data and feedback from those already engaging in pilots of components of the LP, or from those that have existing initiatives that include related components (e.g., BHSc. program, Arts & Science 3CU3, or the new Experiential Learning course in the Faculty of Social Sciences).
6. Consider ways to highlight, showcase and/or reward those students who demonstrate advanced progress in their development through the LP, or use the LP in imaginative ways beyond our expectations.

XI. Reference

1. Forward with Integrity Advisory Group, *Forward with Integrity: The Emerging Landscape*, **2012**. Available at: http://www.mcmaster.ca/presidentsoffice/priorities/ag_report.html.

Appendix I

The working group consulted the literature for guidance on the development of the LP; some of the key findings are summarized below.

Framework

Tompkins *et al*. have referred to an LP as a form of working portfolio because of its emphasis on progress in learning.[1] A working portfolio is thus distinguished from a presentation portfolio, which is a summary of activities or achievements – *this is a distinction that will be critical for McMaster*. Tompkins has suggested that the major values of a learning portfolio include:[2]

- writing out goals that provide focus and commitment;
- examining thoughts and responses to experiences;
- facilitating reflection through structured activities and identification of learning needs; and
- collecting evidence of exposure to new knowledge.

It will be important to consider these values when defining the essential components of the LP, which should be constructed using the frame of "situated learning," which asserts that learning occurs constantly through life.[2] This frame demonstrates that knowledge is "not only told but discovered; unfinished; always reinterpreted,"[2] and invites students to discover knowledge rather than merely listen to those who have already discovered. A consequence of this approach is the recognition that learning is not limited to a classroom setting, but can occur in many environments.

Components

Tompkins has defined three major components for an LP: self-awareness, learning plan and activities, and self-evaluation.[1] Zubizaretta has suggested that the LP be comprised of the following sections, which complement those of Tompkins:[3]

- Philosophy of learning
- Achievements in learning (transcripts, awards)
- Evidence of learning (papers, essays)
- Assessment of learning (feedback, results)
- Relevance of learning (practical applications)
- Learning goals
- Appendices (attachments e.g., certificates)

By asking students to define a philosophy of learning, the LP induces them to identify their motivation and goals for enrolling at the University. Through this process, they become more engaged in the process of learning, since they are more in control of the "why" and "how" of their University education. This method also reinforces the student's ownership in learning and allows them to consider how all of their experiences can be integrated.

Integrated Learning

The LP is a tool that can be used to connect disparate experiences and create meaning from all aspects of the student's learning journey. Integrated learning teaches students how to recognize and articulate the knowledge that they have discovered during these activities and both connect it with the explicit knowledge they gain through formal education and apply it to new challenges or situations.[4] Students should also be encouraged to consider varying perspectives, which will develop their capacity for reflection.[4] Peet *et al.* have described the six dimensions of integrative knowledge and learning, which include the ability to:[4]

- identify, demonstrate and adapt knowledge gained from different historical, social, political, cultural, and economic contexts;
- adapt to differences in order to create solutions;
- understand and direct self as learner;
- become a reflexive, accountable and relational learner;
- identify and discern personal and others' perspectives; and

- develop a professional digital identity.

The LP can be used to guide student consideration of the connections between their diverse experiences and foster the development of these essential capabilities.

Potential Challenges

Consideration must also be given to barriers or challenges that could impact the implementation of a learning portfolio. Gaitán has surveyed students that participated in the use of LPs, and identified some key issues that can be mitigated or navigated during development and implementation.[5] First, students found the use of the LP (and reflection in particular) to be time consuming, which added to their anxiety and stress, and forced competition with other priorities. Gaitán has suggested illustrating to the students how an increase in self-awareness through reflection can help them, and that reflection becomes increasingly facile and enjoyable with practice. It is critical that students perceive value in the use of the LP, so clear articulation of the benefits will be an important aspect of the marketing strategy for the product.

Students also identified a need for clarity in defining the purpose of the LP. Along with outlining the benefits to the students, articulating a goal and purpose for using the LP, as well as anticipated outcomes, will increase their willingness to participate. Gaitán has suggested goals such as monitoring progress for goal setting, integrating knowledge, learning to reflect and communicating with peers/mentors.[5] In spite of clarifying the purpose, some students found the LP to be a bureaucratic process with limited value that did not provide sufficient return for the students' investment of time and effort. One potential strategy to mitigate this issue was to grade or validate the LP in some way, which was more widely accepted.[5]

Other key factors to consider included the importance of confidentiality and security of personal information, as well as a mechanism for regular feedback from mentors or advisors. Moreover, the simplicity of the technology platform, as well as the existence of features that allow students to personalize their LP were both favoured.[5]

References

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2. T. Batson, "Situated Learning: A Theoretical Frame to Guide Transformational Change Using Electronic Portfolio Technology," *International Journal of ePortfolio*, **2011**, *1*, 107.
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Appendix II: Graduate Student Involvement

Prepared by Jennifer Fisher and Ashley Marshall

After collectively considering how the LP could be developed and deployed to the advantage of graduate students at McMaster University, we propose that there are five main areas of potential benefit that deserve consideration. In particular, the e-portfolio component of the LP (exclusive of the proposed course component) could be utilized by graduate students (and potentially undergraduate students) in the following ways, once the security of the data is confirmed. Graduate students should be allowed to customize the e-portfolio for their individual use and security measures must be put in place to protect student information and research as they become exposed to these five potential areas of benefit within the LP.

1. As a *Research Tool* for the Development and Communication of Graduate Research

The use of the e-portfolio tool may prove to be beneficial to graduate students if it is structured partly as a ***research tool*** that can help students document the development of their research ideas and projects by providing an online database that offers a variety of customizable options including, for instance:

a. Forums to reflect, brainstorm, or chart research projects;
b. Forums that encourage connections or reflections between proposed or ongoing research projects, co-curricular activities, and/or social, political, economic, or cultural issues;
c. Links to important research resources available within McMaster;
d. Links to digital research tools (i.e. Delicious, Zotero, etc);
e. Folders for students to upload written drafts, documents, research chapters or conference papers that can also be made accessible to a supervisor and/or supervisory committee for review, editing, and marking.

While additional features for the function of an e-portfolio as a research tool could certainly be developed and tailored more specifically to various disciplines, the e-portfolio could serve as a tool to *streamline* the process of developing research, finding resources, and communicating with supervisors/supervisory committees for graduate students at McMaster. *We would recommend, however, that students reserve the full right to control the public/private access of whatever research and documentation they choose to upload to their individual e-portfolios.* After all, most of the material will be unpublished and vulnerable to concerns like academic theft. We must ensure that students are offered tools that not only help to develop and document their research but also protect their intellectual property in the process.

2. As a *Networking Tool* that Connects Graduate Student Research to Other Graduate Students, Internal McMaster Faculty, and/or On/Off-Campus Networks, Communities, and Industries

If one potential component of the proposed portfolio includes the creation of a public profile, and within this public profile students are encouraged to identify their main research interests and areas, this "keyword" information could be used to connect graduate students and internal McMaster faculty together across an array of interdisciplinary fields and on/off-campus networks. *Academic.edu* is an excellent example of how this "keyword" function can be enabled. Once an individual identifies and posts their main areas of research on an *academic.edu* profile (i.e. "cultural studies," "critical race theory," "education", etc.) the network will suggest other people whose research you may want to choose to "follow" due to shared research areas or interests.

This networking component would encourage interdisciplinary communication between graduate students and internal faculty at McMaster, and public engagement and communication with on/off-campus networks, communities, and industries. It may also be used to advertise upcoming events, talks, conferences and other activities within and outside the McMaster campus to a wider array of students, sponsoring additional opportunities for community involvement and student participation.

3. As a Critical *Professionalization Tool* that Enables the Creation of a Digital Academic Portfolio that is Accessible to the Public for Graduate Students

One of the major challenges for graduate students as they progress through graduate school and move onto the job market includes how they should manage their "digital footprint" or "digital presence" (i.e. the wide-array of personal and/or professional information students post or place online). Both undergraduate and graduate students alike are entering an economy where the task of searching and applying for jobs is now largely conducted online through various servers, websites, or job databases like *monster.ca.* Students on the job market must also begin to use (if they haven't already) tools like "*LinkedIn*," "*Facebook*," and/or "*academia.edu*" to create online portfolios that prospective employers can both search and access.

The e-portfolio component of the LP could be used to provide students with an opportunity to construct a public profile that includes selected digital images, biographical information, and options to upload items to their portfolio including a CV, conference papers, published works, select reflections, artistic and/or other multimedia projects. These profiles should remain accessible to students well after the completion of their degrees at McMaster as a new benefit for alumni. If the profile becomes inaccessible six months after graduation, our worry is that students won't bother investing the time to develop an e-portfolio while they are at McMaster – especially when they could use a tool like *academia.edu* and develop a profile that is permanent and unrestricted. Finally, one major benefit for graduate student use of the e-portfolio would include the production of a public and/or professional academic profile that is certified or legitimized by the institution of McMaster University, versus open profile forums where absolutely anyone can create a profile like *academia.edu*. If the e-learning portfolio was "certified" in some sense by McMaster, we think it would generate a substantial amount of undergraduate and graduate student buy-in.

4. As a *Teaching and Pedagogical Tool or Resource* that Provides Experience with *Teaching Technologies* for Graduate Students

In the United States and Canada, universities that are in the process of hiring new faculty are stating more frequently in their list of job requirements that candidates *must* demonstrate and be able to provide documented experience with teaching technologies. Given the growing demand for professionals who are experienced with teaching technologies in educational institutions, from public schools to universities, we think graduate students interested in pursuing employment possibilities within the field of education would express a real interest to work with the e-portfolio component of the LP at McMaster.

At this early stage, we suggest that graduate students are the best resource within the McMaster community to run tasks associated with the e-portfolio and to function as mentors to undergraduate students for the course component of the LP. Graduate students, under the heading of a Teaching Assistant, and with sufficient training and guidance, can be responsible for the following activities with an assigned group of undergraduate students:

- administering tutorials in person and online;
- assisting students in the development of their e-portfolio in person and online;
- assisting students to think critically about digitization and enhancing their digital literacy; and
- assisting students in the *innovative* and *critical* use of an e-portfolio within and outside of the University.

This would ease the burden on faculty members responsible for providing mentorship to the LP. Graduate students could also provide feedback on the usage and value of the LP that could be used to continually assess the success of the initiative. It should be stressed that critical forms of learning, engagement, and the enhancement of both undergraduate and graduate student experience will *not* emerge from the introduction of technology or additional tools like e-portfolios into the McMaster curricula on their own. Rather, the success of the LP will depend upon the kinds of supports that are put into place around the use of such technology for students.

For those students who are not interested in serving as mentors, the e-portfolio tool could still be useful as a tool to prepare a teaching dossier, as well as to document, store, reflect upon and share lesson plans for courses in which they are involved. As such, the e- portfolio component could offer both a resource and communications system that supports the development of teaching and critical pedagogy within the McMaster community. Graduate students employed as teaching assistants should be encouraged to think productively about their role in

undergraduate education while having access to resourceful teaching information posted by different graduate students and McMaster organizations like the Centre for Leadership in Learning.

5. As *a Supportive Resource and Tool for Different Forms of Public Intellectualism* Among Graduate Students

If students at both an undergraduate and graduate level are constructing public portfolios, then one of the anticipated effects of this task includes the question of public intellectualism. We think e-portfolios that have a public orientation, like those that are under discussion, necessarily entail and encourage students to think about their own representation – and the development and representation of their research and pedagogical interests – with different publics in mind. We have an interest in thinking about how the e-portfolio may be used as a tool for public intellectualism and the role of the public intellectual, by which we mean a student or collective of students who are encouraged to think critically about how their academic or scholarly work invariably speaks to local and global publics, rather than a forum to facilitate traditional (and fairly antiquated) notions of public engagement as something reduced to a politics of volunteerism.

Furthermore, we suggest that the LP can be used as a tool to facilitate the development of an ethical grammar which allows for more robust theoretical discourses surrounding civic and social agency to take place. Using the LP as a technology to nurture the burgeoning of public spaces which advocate for critical engagement, we recognize the LP's capability to facilitate students who seek supplemental or alternative outlets for public engagement and activism, while also seeking recognition from like-minded colleagues who can mobilize to support the need for public spaces of imagination. The potential for the LP to serve as a tool of public intellectualism is an attractive feature for engaged, politically activated students with a thirst for community.

A Final Note of Concern: The Question of Privacy, Security, and Surveillance

It goes without saying that some students will voice concerns over the privacy and security settings of the e-portfolio, particularly around the safety of their personal information and whatever research documentation they upload or store within their portfolio. Others might voice that they feel uncomfortable with the creation of a "public profile" and the forms of surveillance that any kind of digital public presence can potentially entail. And others still will most certainly be concerned with how an e-portfolio can function as an indirect method of assessment that administrators use to analyze undergraduate and graduate student cohorts within the logic and language of "probability" and "risk," the projection of statistical information, student related data mining, and monitoring of student research projects. We think the question of privacy, security, and surveillance is of the utmost importance. Graduate students should be allowed to customize the e-portfolio to their own individual use and security measures must be put in place to protect student information and research as the e-portfolio is developed, deployed, and used by students and faculty.

Appendix III: E-Portfolio Reflection: Sample Pass/Fail + Feedback Rubric

In order to maximize the learning potential, we are suggesting that student reflections be reviewed by peers, mentors (which could be upper year or graduate students or others), and themselves. The reflection should be considered part of an ongoing learning cycle rather than the conclusion of a learning process. With this in mind it is important for students to generate an action plan that will extend their learning beyond this particular instance. The red colour is intended to indicate dissatisfactory progress, and the green colour suggests that a mark of 'pass' would be given.

	Absent	Submitted/Lacking	Submitted/Satisfactory	Strong	Action Plan
	-Student has not submitted a reflection for review.	-Student has submitted a reflection piece, but it is absent of significant information and detail -Few connections to learning goals. -Thoughts are disorganized, repetitive, ideas are too general or superficial - viewpoints and interpretations are unsupported	- Goes into some detail relating the experience to learning goal - Makes general connections between learning experience and learning goals - Demonstrates a general reflection -Viewpoints and interpretations are supported with some description and evidence	-Makes strong and clear connections between experience and learning goals -Able to name further avenues of learning and inquiry (action planning) - Provides strong details related to the overall experience - Can relate between this experience and other experiences to articulate a point of view	What specifically can this student work on to create deeper reflections and make strong connections between the experiences and goals?
Peer Review 1					
Peer Review 2					
Mentor Review					
Self-Review					

Appendix IV: Faculty Support and Training for the Learning Portfolio Process

Prepared by Erin Allard, Kris Knorr, Catherine Swanson, and Lori Goff

In order to provide faculty members with adequate support, guidance and training both to use the learning portfolio in their classes and as an instructional tool, as well as to serve as mentors for students, CLL has provided the following details about what the Centre has learned about faculty needs in two areas: mentorship and use of educational technologies.

Mentoring and the Learning Portfolio

What is Mentoring?

"Mentoring is a process for the informal transmission of knowledge, social capital, and the psychosocial support perceived by the recipient as relevant to work, career, or professional development; mentoring entails informal communication, usually face-to-face and during a sustained period of time, between a person who is perceived to have greater relevant knowledge, wisdom, or experience (the mentor) and a person who is perceived to have less [the student]" (Bozeman & Feeney, 2007).

Key Goals of Mentoring (Chiappetta-Swanson and Watt, 2011)**:**

- Mentor enhances, monitors and evaluates the student's learning experience
- Mentor uses own experience to help student achieve goals
- Student engages in personal development
- Reciprocity between mentor and student

Literature Review on Mentorship Training and Support

1. **Support for the mentor must be built in at every level of the mentoring program** (Zachary, 2000).
   - Training and education are strategically linked
   - Dedicated time spent on mentor coaching, communication, and training
   - Ongoing support to help, coach and counsel is readily available for mentors
   - Resources for mentors are accessible and up-to-date
   - Skill-building, new learning opportunities and renewal training is available for mentors as needed

2. **Mentors play a crucial role in developing a mentee's personal growth/psychosocial skills** (Johnson, 2007).
   - Those aspects of the mentor relationship that enhance the student's sense of self-esteem, student identity and sense of competence
   - Helping students to recognize, accept, control and appropriately express emotions
   - These functions become increasingly important later in the mentor relationship

3. **Critical reflection is repeatedly cited in the research as the main stimulus to student improvement in learning.**
   - Such enhancement of learning performance occurs as a result of the mentoring and the mentor's support of the student's systematic self-analysis that occurs during the process of reflection in writing (Zubizaretta, 2004).

4. **Guidance provided by the mentor through detailed expectations and evaluation criteria promotes more focused, substantive reflection on the part of students** (Zubizarreta, 2004).
   - It is important to approach the use of learning tools carefully and to be deliberate and clear in expressing explicit expectations to students (Brookfield, 1995).
   - The purpose of the portfolio must be meaningful to the students. All students do not have to assemble portfolios for the same purposes and audiences, but all must have explicit rubrics for scoring (Hofer and Pintrich, 1997).
   - Without such planning and precision on the part of mentors, students have a reduced chance of embracing the challenges and rewards of reflective practice.

5. **Good communication creates a solid basis for navigating both the interpersonal and academic aspects of the mentoring relationship** (James & Baldwin, 1999).
    - Clear and consistent communication is a key element of a successful mentor relationship.
    - Negotiating shared expectations early in the relationship creates a solid foundation on which to build over time.

Training, Guidance and Support of Mentors

Recommendations:

1. Develop, pilot, and refine an orientation to mentorship program that helps mentors in building mentoring relationships with students. This program would aim to build a mentoring relationship and could address expectations of the mentoring relationship, communication strategies, constructive feedback on portfolio submissions, use of reflection in the mentoring relationship, etc.
2. Develop ongoing training and various levels of support for mentors. This could include structured workshops on:
    - Articulating expectations and learning goals
    - Evaluation and assessment of learning portfolios
    - Guided reflection
    - Theory and practice of mentorship related to the scholarship of teaching and learning (best practices)
    - Strategies to manage mentor challenges
3. Develop communities of practice for mentors to encourage monthly mentor dialogue and support in dyads or small groups.
4. Develop support guidebooks and resource materials on best practices in mentoring.
5. Develop a repository of sample tools and resources to facilitate the mentoring process (e.g., possible meeting agendas, possible co-curricular activities, a variety of rubrics, sample portfolios).
6. Incorporate mentorship training with other ongoing professional development opportunities for educators at McMaster (e.g., the Program for Faculty Development, the Faculty of Health Sciences' Mentorship Program)

The Centre for Leadership in Learning (CLL) has the expertise to create faculty development programs and to facilitate, guide, and support faculty members and graduate students as mentors. This expertise can be used to develop a learning portfolio program that is aligned with best practices in mentorship. More specifically, the pedagogical team in the CLL has experience in:

- Conducting research to determine faculty needs and interests
    - E.g., Through McMaster's Faculty Development Information Survey it was found that 67% of respondents (i.e., 248 McMaster full-time faculty, contractually limited faculty, clinical faculty, and sessional lecturers) said they were 'Somewhat Interested' or 'Interested' in developing mentor/student partnerships related to teaching and learning (Knorr & Vajoczki, 2010)
- Developing programs and services designed to support instructors on an ongoing basis
- Facilitating seminar and workshop series on teaching and learning topics
- Supporting teaching and learning projects
- Training individuals how to provide formative, constructive feedback
- Individually consulting with faculty, staff, and graduate students on any teaching-related matter
- Developing support guidebooks and resource materials on a variety of teaching topics
- Working with faculty-wide and interdisciplinary curriculum development committees

While the CLL is well positioned with experience and expertise to develop and provide mentorship training and support, additional resources would be required. Once there is more clarity on the breadth and scope of the desired training program, we'll be able to more accurately understand the resource implications.

Technology Training and the Learning Portfolio

There are various tools available commercially that can support the development of e-portfolios. McMaster already subscribes to Desire2Learn's e-portfolio program. CLL has developed and currently delivers training and

provides support for faculty members on the use of the e-portfolio tool. Having a good understanding of the needs for e-Portfolio technology training will prove beneficial, even if a different tool or program is selected for the Learning Portfolio. As such, we have assembled some information from the literature and on past experience in supporting faculty as they begin to use new educational technologies as part of their teaching.

Literature Review on e-Portfolio Technology Training

- Faculty and program administrators report greater challenges in learning e-Portfolio technology than students (Meyer & Latham, 2008).
    - 42% of faculty responses and 52% of program administrators verbalized difficulties.
    - 5% of student responses mentioned challenges.
        - The experiences of CLL staff members also suggest that faculty and staff need more support and training for new educational technologies than students.
- Specific training requirements of faculty (Thomas, Lamson, & King, 2001) needs to include areas such as:
    - how to create the portfolio,
    - how to choose artifacts to place into the portfolio,
    - how to teach students to write a substantive reflective piece for each artifact submitted,
    - how to save the portfolio to either an outside system and/or the University server,
    - how to assess the student portfolios that have been designated for grades,
    - how to analyze class data to reflect upon pedagogy,
    - how to improve pedagogy and design rubrics for better results

- Educational technology training (Sturrock & Early, 2007) should include:
    - development and delivery by flexible support teams
    - paper and electronic user guides for easy quick referencing
    - small group and one-on-one tutorial services
    - an opportunity for continual student and faculty feedback for re-evaluation of training procedures

- In a multi-institutional study of e-Portfolio implementation, the following four recommendations were made (Wetzel & Strudler, 2005):
    - train a coordinator who will be easy to access for all faculty
    - be consistent in training all constituents
    - have training on a portfolio system, whether or not the institution chooses to go electric
    - implement and train slowly, in a step by step method (in this particular study, all six institutions took two to three years to complete the portfolio training and implementation process).

- Format of training delivery will need to change over time (Wilhelm, Puckett, Beisser, Wishart, & Meredith, 2006).
    - When e-Portfolio systems are first introduced, large training sessions with faculty instruction worked best, as compared to small group and individualized instruction.
    - After a year or more, faculty were in different stages of understanding and implementation. Following up with individualized training proved to be more efficient than whole group instruction.

- Incentives for faculty training in e-Portfolios (Harvel, 2008):
    - Being able to leave a training session with not only knowledge, but practiced skill (e.g., a faculty member knowing that at the end of the sessions they will have their own professional portfolio has been found to be associated with strong motivation).
        - To be able to use their own portfolio as a model in training their students can be a powerful reward for faculty who are practical, lifelong learners.
    - Training should extend beyond the “how to” of building and assessing portfolios.
    - Training should encompass a clear picture of the purpose of the e-Portfolio for all stakeholders.

- Barriers to e-Portfolio training include:
    - Lack of understanding of computing literacy, file management skills, multimedia digitalizing skills, and incompatibility of software and Internet browser (Ouyand & Andrews, 2004)
    - When not using the e-Portfolio system each semester, faculty forgot procedures (Sturrock & Early, 2007)
    - Reported difficulties with both logging in, as well as with uploading their content into the e-Portfolio, and being timed-out on slower home computers (Sturrock & Early, 2007)
    - Faculty changeover as a problematic issue (Sturrock & Early, 2007)
    - A lack of time to learn and effectively adopt the e-Portfolio system (Thomas et al., 2001)

Data from the McMaster Faculty Development Information Survey (2010)

- Survey data was collected from 248 McMaster full-time faculty, contractually limited faculty, clinical faculty, and sessional lecturers. The data indicated that there was an extremely strong preference for face-to-face training instruction. Typically, less than 15% of survey respondents preferred an online training approach (synchronous online, asynchronous facilitated online, asynchronous self-paced online) (Knorr & Vajoczki, 2010a)
- Data from six focus groups (each comprised of approximately 25 volunteers from the aforementioned survey) indicated that some faculty members would be open to learning "how to" information through online learning (e.g., how to build the e-Portfolio, how to upload content, etc), but face-to-face was preferred for workshops on effective pedagogical uses of technology (e.g., connecting course content to e-Portfolio assignments, writing the e-Portfolio into the course syllabus, assessment/evaluation of e-Portfolio artifacts) (Knorr & Vajoczki, 2010b)

The CLL and Training and Support

- Research suggests that successful faculty training of e-Portfolios includes one-on-one availability of support staff to assist faculty though technological issues when necessary. This is a service that the CLL currently provides with their existing technologies.
- Larger group, face-to-face training would be required to support the campus through the transition to e-Portfolios. After a year, this type of training could be phased out and replaced with smaller group training, one-on-one support, with options for online or face-to-face delivery modes.
- CLL has experience developing learning technologies training workshops that are offered in face-to-face, online, and one-on-one or small group consultation format.
- A workshop already has been developed for the Avenue to Learn e-Portfolio tool; CLL would have the expertise to develop workshops and training modules for other platforms if an alternate is selected.
- Based on our past experience, good training and support programs for educational technologies take time to develop and refine.
- Individuals who are going to be mentors will need to be trained, as will faculty members who plan to use the portfolios for their courses (even if they themselves do not plan to be mentors). A two-stream training system may be one approach to addressing these two roles.

While the CLL is well positioned with experience and expertise to develop training for a variety of educational technologies, if new technologies are selected, additional resources would be required to support the implementation of this campus-wide initiative. These resource implications should be discussed with the Assistant Director of the Centre for Leadership in Learning as conversations continue regarding the selection of portfolio platforms.

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