Applications of LinkedIn Learning in Ontario's Post-Secondary Institutions

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ECAMPUSONTARIO

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Introduction

LENA PATTERSON

In the spring of 2017, the Government of Ontario asked eCampusOntario to lead a three-year pilot of the LinkedIn Learning platform. The pilot is designed to reach every student enrolled at an Ontario college or university and provide access to just-in-time, skills-focused video content for career preparation and success. eCampusOntario's role in the pilot has three components. First, assist institutions to roll out the platform. Second, conduct province-wide research on the efficacy and uptake of the tool, in partnership with the Higher Education Quality Council of Ontario (HEQCO). Third, plant the seeds of a community of practice in which educators, librarians, learners, instructional designers, and educational technologists from across the 45 colleges and universities in Ontario come together to build a body of knowledge that enhances collective experimentation and engagement with the LinkedIn Learning library. This casebook is a demonstration of the community of practice in action.

The cases in this collection employ a range of approaches and perspectives. Authors stepped forward to participate based on their own interest and a desire to think more deeply about the potential for LinkedIn Learning to augment or complement their work. Each case is unique and generated out of direct experience with the library and platform. Authors explore the intersections between

LinkedIn Learning content and pedagogy, instructional design and learning management systems. They reflect on the potential of just-in-time resources for students of all ages, from first year to adult professional learning. They consider the impact of video-based learning and the connections with student engagement. Most importantly, they compel us to expand our inquiry about the acquisition of a new technology, to press on and seek a deeper understanding of the intersection between the tool and the learning. On behalf of the whole team at eCampusOntario, we hope you are inspired to use this casebook as a springboard for your own investigation.

And don't forget to share what you uncover. The community depends on it.

Lena Patterson, Senior Director, Programs and Stakeholder Relations, eCampusOntario

1. Effectiveness of Student-Led Co-Curricular Software Learning in STEM Education

KEVIN GINGERICH AND ERIK NEVLAND

Abstract

This case study reflects on a collaborative learning workshop developed to address a need for software training in ArcGIS Pro software developed by Esri. A transportation engineering student group organized this event to be a technology-enhanced learning session using the LinkedIn Learning course ArcGIS Pro Essential Training authored by Adam Wilbert (2016). The online course was adapted for a group setting by introducing, in addition to the video content, three additional forms of instruction, including a lead student facilitator, software representative, and peer interactions.

The effectiveness of the day-long workshop is examined using feedback from the participants and reflections made by the lead facilitator. Student participants

provided favourable reviews and indicated that the LinkedIn Learning course provided high-quality, step-by-step instructions. The various sources of instruction during the workshop were all highly rated, with the lead facilitator receiving the highest average score. As part of the workshop, the students practised teamwork and leadership in their participation as co-facilitators and experienced the value of group-based interactions. The high enthusiasm for the event and interest in similar future workshops hopefully contribute towards lifelong learning for the participants.

Potential improvements are discussed in this case study based on the workshop outcomes and received feedback. Minor suggestions to the LinkedIn Learning format that could improve the user experience include the addition of software version numbers and video updates on the course overview, along with greater control of the video playback speed. Student feedback also indicates that there were issues with the level of difficulty and lack of clear performance indicators of the video content. A potential remedy for this situation could include the addition of frequent quizzes to assess the learning of each participant and provide immediate feedback. Finally, the classroom configuration was found to be a hindrance for the participants due to line-of-sight issues that could be remedied with additional displays or changes to the existing layout.

Overall, the adoption of video-on-demand content for group-based activities shows favourable potential since the majority of participants expressed a preference for this approach over individual learning. Therefore, it is

recommended that LinkedIn Learning courses include optional activities and features to improve the learning effectiveness of their content for group participants and facilitators.

Introduction

There is increasing academic awareness of the value obtained from learning experiences outside a typical classroom setting, where students are given the opportunity to enhance technical skills alongside non-technical skills such as leadership and communication. Experiential learning has gained prominence in academic environments and further led to the development of co-curricular transcripts and records, such as those available at York University and many other Ontario learning institutions. The extra-curricular activities outside structured programs reinforce life-long learning by generating knowledge, skills, and experiences to complement formal studies. This fits with the Lassonde School of Engineering's vision to develop Renaissance Engineers (Lassonde, 2013) that can adeptly solve

complex problems and adapt competently to future challenges that do not yet exist.

The case study discussed herein reflects on a co-curricular event that was created after receiving feedback from Civil Engineering graduate and undergraduate students at York University who were interested in learning a specific software tool, Esri's ArcGIS Pro. This software is one example of a geographic information system (GIS), which provides a user with an environment to process and visualize datasets that contain a spatial component, such as the road links and junctions that allow a vehicle to travel from its origin to a destination. Graduate students' interest from our academic department arises primarily from the potential to expand their research capabilities. For example, Nevland (co-author) has used this software to identify and classify the locations where trucks stop in Ontario to rest in the middle of a long-haul trip (Nevland, Gingerich, & Park, 2019). This research is performed to help provide municipalities with a data-driven approach that assesses the supply and demand of truck parking. Such information is crucial for appropriate planning and the effective allocation of resources. Undergraduate students are also interested in the software, even though their intentions tend to be more practical. Learning the software provides these students with tools to improve the content of their project submissions in classes such as the fourth-year capstone design class, which is a project-based course undertaken by all upper year engineering students. Additionally, learning the software provides these students with a tangible increase in their value and employability in the modern job market.

A workshop was subsequently planned by the Institute of Transportation Engineers (ITE) York University Student Chapter (ITE York University Student Chapter, 2019) to provide a learning opportunity for their students based on a shared interest in the ArcGIS Pro software. This student group provides content and opportunities for students who are interested in the transportation industry. Part of their mandate includes the facilitation of state-of-the-art software workshops. After consultation with the general membership of the group, a consensus was reached to organize an event that would teach ArcGIS Pro.

Given their high quality, LinkedIn Learning resources were selected for this event to reduce the burden of creating new content. This case study seeks to analyze the effectiveness of the event as a student-led activity, given the importance of co-curricular engagement to provide opportunities that enhance student leadership and support lifelong learning. To enable this analysis, a detailed feedback survey was created and distributed to the attendees after the event had occurred. The effectiveness of the workshop is later assessed in this case study based on the characteristics of the student learning experience, student leadership experience, and lifelong learning.

The *student learning experience* is analyzed by asking the participants how effectively they were able to learn the content and provide feedback on the quality of the experience. The survey additionally provides an evaluation of different instructional elements, including the video content, student facilitator, software expert, and peer assistance.

The *student leadership experience* is discussed from the perspective of the lead facilitator, Nevland, by providing a descriptive narrative of his experience. In addition, the feedback survey for participants asks them to rate the level of assistance they provided to those around them. This collaborative learning environment helps provide students with the opportunity to embrace leadership roles within their peer group.

Lifelong learning is examined by asking the participants about their enthusiasm for the content before and after the event. Additionally, the survey queries students on their intent to continue learning the software and asks the participants if the group-based event they experienced was more beneficial than individual learning.

The remaining sections of this case study provide: (1) details on the video instruction and learning space; (2) the experiences of the lead facilitator; (3) the feedback survey design and results; and (4) pedagogical reflections and final thoughts on the value of the event as a learning opportunity.

LinkedIn Learning Video Instruction

A specific need was identified for students to learn introductory knowledge and skills associated with GIS software. The high-quality, ready-made materials from LinkedIn Learning provided participants with an

opportunity that might not otherwise exist in their structured educational curriculum. The principal requirement for the event was that it should be facilitated by students, both as a solution to limited institutional teaching resources and for the opportunity it provides for student leadership. The nature of student facilitation required pre-existing content, as the students themselves are learning the material. Finally, the format should preferably accommodate various other learning opportunities to allow additional gaps in knowledge to be addressed in the future.

Building the event around LinkedIn Learning resources satisfied the above stated objectives. The tutorial videos provided visual and audio guidance along with the data required for students to participate. In addition, three other forms of instruction were utilized. A representative from the software company, Esri, was on site in the morning to provide additional guidance and helpful information. Nevland prepared as the lead facilitator for the event since he had some prior experience with the software and was familiar with LinkedIn Learning courses. The presence of a student as the lead facilitator helped provide a welcoming atmosphere for students to create open dialogues for any questions or difficulties. Finally, the event was designed as a collaborative environment, with the participants acting as co-facilitators by helping each other progress through the content.

The event was held as a full-day Saturday session to accommodate busy weekday schedules. An on-campus lab space with 24 computers was selected as an appropriate location based on availability, computer

resources, and integrated audio-visual systems. The LinkedIn Learning content selected for the day was the *ArcGIS Pro Essential Training* video authored by Adam Wilbert (Wilbert, 2016). This course was rated at an intermediate skill level and the content was deemed suitable for both beginners and experienced users of other GIS platforms. The format of the videos included a screencast of the software overlaid with audio narration in which the author demonstrated the capabilities of ArcGIS Pro. Exercise files were provided so that each student could participate along with the author and perform the challenge questions strategically placed at the end of some chapters.

One early issue with the course content was that the software version was no longer current. The version number is identified in one of the course videos but should be more prominently displayed. We suggest that the version number be placed in the overview, along with any updates to the course that have been added to keep the content current. For this event, the software used in the course did not include major updates that had been installed on the computers used by participants. Therefore, occasional differences would appear between the two software versions.

> **Highlight 1:** For software courses, display the version number prominently in the course overview and consider addressing future changes that correspond to major software updates.

Learning Environment

The workshop had 24 pre-registered participants to utilize each available computer. This included both undergraduate and graduate York University students along with several students from Seneca College. This diverse mixture of students was particularly beneficial as it encouraged interactions across institutions where participants could discuss their various experiential needs, which is not an opportunity typically available in the formal lecture setting. An Esri software representative was available in the morning to open the workshop with a brief introduction. Afterwards, most of the day was used to engage with the LinkedIn Learning course material. This was the first time that the ITE York University Student Chapter has offered an event built around a LinkedIn Learning course; however, the overall experience presented no major difficulties.

The learning space utilized for the workshop was a recently renovated classroom that now includes a unique configuration consisting of movable tables in the center of the room and 24 computers located along the perimeter of the room, as shown in Figure 1.1. In addition, the front of the room consisted of typical academic learning tools, including a lead computer/podium, whiteboards, and projection screens. The ArcGIS Pro Essential Training course (Wilbert, 2016) available from LinkedIn Learning was shown on these screens during the event.
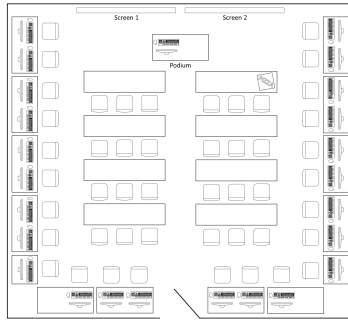
Figure 1.1, Classroom layout

The space layout provides flexibility for small lecture-style classes, meetings, and computer labs. The central space was predominantly unused for this event but did serve a functional purpose during lunch and break activities. The space was generally suitable for the event, but the computers facing the outside walls may have limited the ability of students to follow along with the course. Immediate feedback indicated that the participants had difficulties following the course instructions while focusing on their own computer screens. This was likely caused by forcing students to turn towards the main projection screen at the front of the room while they viewed the course videos. In this regard, it may be beneficial for future workshops with a similar format to consider alternatives to mitigate this issue. These alternatives are discussed later in a discussion on Room Layout and Line of Sight.

> **Highlight 2:** The room configuration was not ideal for this workshop since students did not have a line of sight with the instruction video on the main projector and their computer.

Facilitator Perspective

As this event was a student-led initiative, the ITE York University Student Chapter selected their president, Erik Nevland, to be the lead facilitator. Nevland is a Civil Engineering Master's student with recent experience using the ArcGIS Pro software that was selected for the event. However, he expressed concern with content creation related to this software given limited exposure to the tool as a student and the time commitment required to produce new material. Based on those factors, a decision was made to use existing video-on-demand (VOD) resources to facilitate the workshop. Nevland had previously used LinkedIn Learning resources in the past, including parts of the ArcGIS Pro Essential Training course (Wilbert, 2016) to expand his skill set in GIS.

Nevland provided lead facilitation for the workshop and organized a majority of the event logistics. Along with other members of the student group, he was responsible for booking the room, coordinating the invitation of a software specialist to attend the workshop, obtaining software licenses, and arranging for food. He was also

responsible for reviewing the LinkedIn Learning course in advance of the workshop to ensure that he was familiar with the content and functionality of the video player. Based on these requirements for a student-led experience, Nevland was able to improve his leadership and organizational skills.

At the beginning of the event, Nevland had various responsibilities as the lead facilitator. He ensured that adequate support was given beforehand to provide attendees with event information and directions to the workshop location. He also greeted the participants of the event as they arrived in order to better understand and manage their expectations. This conversation helped build an open discourse with the students as peers and encouraged them to ask questions.

During the event, Nevland was responsible for some introducing the software representative and disseminating the schedule for the day. After these formalities were complete, he was responsible for control of the videos as needed. Between videos, the video player was paused to provide time for students to repeat the actions of the course author on their own computer. In addition, further time was provided at the end of a chapter when a challenge was provided by the course author. During these breaks between videos, Nevland actively engaged with the participants to monitor their progress and address any questions or concerns.

At the conclusion of the event, Nevland expressed positive feelings towards the outcomes of the workshop. Participation was satisfactory and the attendees were

highly engaged with the content. Several recommendations are provided based on his experience to improve any potential future events. One complication occurred due to the classroom audio-visual equipment. The audio was always synced correctly with the video, but a three-second audio silence occurred each time the video resumed. Nevland was able to account for this technical issue by quickly replaying the video after three seconds. This is a minor inconvenience in isolation, but it adds a significant amount of stress to the facilitator when the video must be frequently paused. Based on this experience, it is important for the facilitator to review the content of the video instruction and the corresponding interaction with the audio-visual equipment in advance of an event.

Highlight 3: Review the event space in advance of the scheduled activities to check for technical issues between the video content and audio-visual equipment.

Feedback Survey and Results

A feedback survey was distributed online to students with several different question formats, including multiple-choice questions, Likert scaled questions from 1 to 5, and open-ended questions. In addition to the introductory information shown in Figure 1.2, the survey included four

sections containing a total of 20 questions for the respondents, including: (1) general information; (2) video-on-demand (VOD); (3) the learning experience; and (4) open feedback. The survey questions and discussion points arising from the participant responses are provided below. Each section of the survey included brief introductory text to provide necessary context; however, only the questions themselves are listed below for brevity.

Figure 1.2 Invitation to feedback Survey

General Information

The general information section of the feedback survey includes questions related to student education level,

past experiences with extra-curricular learning activities, and enthusiasm for the event before and after it occurred.

Part 1 Survey Questions:

> Q1. What level of post-secondary study were you enrolled in when you attended the event?

> Q2. Have you attended any extra-curricular learning events in the past?

> Q3. If yes, briefly describe the format of the extra-curricular learning events that you have attended in the past.

> Q4. How would you rate your enthusiasm for the workshop before you attended the event? *(1 indicates low enthusiasm and 5 indicates high enthusiasm)*

> Q5. How would you rate your enthusiasm for the workshop after you attended the event? *(1 indicates low enthusiasm and 5 indicates high enthusiasm)*

The overall student attendance included 24 active participants. From this population of attendees, 33% filled out the feedback survey to help guide future events. This sample consists of an equal distribution between fourth year undergraduate students and graduate students. The respondents were also evenly distributed in their responses about attendance at previous extra-curricular learning events, with 50% indicating that they had previous experiences. Traditional tutorial style sessions

were the most common type of previous learning experience, where an objective was given at the beginning of the event and the attendees worked towards achieving that objective with the assistance of an instructor. By contrast, the ArcGIS Pro Essential Training course (Wilbert, 2016) provides a general overview of the core information and concepts without a single overarching problem that the participants are intended to solve.

Results from the general questions indicate that enthusiasm was relatively high before the event (the average rating was 4.25/5) and remained similar after the event (4.37/5). Most respondents provided the same rating of enthusiasm in both cases; however, a few increased or decreased their rating by one point in either direction. Since the format of the event was new to the facilitators and participants, we consider this to be a very successful outcome. It should be noted that the high overall enthusiasm may reflect the nature of the chosen topic, which arose from discussions with students prior to the workshop to determine the subject matter that they were most interested in learning.

Highlight 4: The event was rated with high enthusiasm before and after the event. We consider this to be a strong indication of success since neither the

facilitators nor participants had much previous experience with events developed around group-based video-on-demand (VOD) content.

Video-on-Demand (VOD)

A video-on-demand section of the feedback survey requested information from the respondents on their experiences with this style of learning and a reflection on LinkedIn Learning based on this event.

Part 2 Survey Questions:

Q6. Have you had any past experiences with e-learning VOD before you attended the event?

Q7. If yes, please provide a brief description of those past activities.

Q8. Do you have any previous experience with LinkedIn Learning videos?

Q9. Are there any features of the LinkedIn Learning video tutorials that you thought enhanced your learning experience?

Q10. If yes, please provide a brief explanation.

Q11. Are there any missing features of the LinkedIn Learning video tutorials that you think would have improved your learning experience?

Q12. If yes, please provide a brief explanation.

The results of the survey indicate that the majority of participants did not have any previous experience with video-on-demand e-learning (62.5%) or LinkedIn Learning videos (50%) before attending this event. Interestingly, we would characterize LinkedIn Learning videos in the former category; therefore, it is peculiar to observe that more respondents had experience with these specific videos. A precise definition of video-on-demand e-learning was not provided to the respondents, making this a possible reason for the discrepancy. In any case, these results show some unfamiliarity with this style of learning.

The survey results indicate that a higher proportion of participants identified LinkedIn Learning's videos as beneficial (87.5%) compared to those who think that there are features that require improvement (25%). Feedback on the positive aspects of the LinkedIn Learning videos mentions high-quality, step-by-step instructions that were easy to follow. The ability to obtain offline access was noted as an additional positive feature. This is particularly beneficial for York University students, since approximately 71% of them travelled by local or regional transit in 2015 (StudentMoveTO, 2016); this proportion has

likely risen substantially since the opening of two subway stations on campus in December 2017 (York University, 2017).

> **Highlight 5:** The high quality and step-by-step instruction of the videos were considered positive features of LinkedIn Learning videos.

Feedback on potential improvements to the LinkedIn Learning course included a suggested quiz system that could provide helpful checkpoints for students and confirm their results as they progress through the content. The course used for this event did include challenge sections where the participants were encouraged to perform an open-ended task related to the content. Challenges in subsequent chapters built upon the skills learned in the previous challenges. However, these challenges were typically open ended, leading to participants feeling unsure of the quality or accuracy of their work.

Adding in frequent quizzes may provide a reiteration of core concepts taught in the videos. The first challenge portion of the existing video series occurred after 77 minutes of continuous play (based on the regular speed), which was observed to be a substantial amount of time during the event. Increasing the frequency of the challenges or quizzes would help keep the students focused and confident in their progress. Additionally, a

quiz feature could provide more of a challenge to the participants, encouraging individuals who have a competitive nature. For increased competitiveness, additional practices could be adopted to provide a scoring system based on the correctness and timeliness of an answer. Similar approaches can be found in existing quiz apps such as Kahoot (Schinkten, 2017). This would also bring together the participants in class and take advantage of the group-based nature of this type of event.

> **Highlight 6:** A quiz system built into (or used alongside) the LinkedIn Learning course may help provide an additional challenge for students.

The Learning Experience

A learning experience section of the feedback survey provided respondents with an opportunity to reflect on the different types of instruction. The event was designed to include four different forms of instruction, including video content, lead facilitator, software representative, and peer interactions.

> **Part 3 Survey Questions**:

Q13. Rate your learning experience from the LinkedIn Learning video material *(1 indicates a very poor learning experience and 5 indicates a very high learning experience)*

Q14. Rate your learning experience from the lead facilitator – Erik Nevland *(1 indicates a very poor learning experience and 5 indicates a very high learning experience)*

Q15. Rate your learning experience from the ArcGIS software representative *(1 indicates a very poor learning experience and 5 indicates a very high learning experience)*

Q16. Rate your learning experience from your peer interactions *(1 indicates a very poor learning experience and 5 indicates a very high learning experience)*

Q17. Did you provide any learning assistance to your fellow peers during the GIS workshop?

The feedback results indicate that all forms of instruction were positively received, with ratings above four out of five in each case. The lead facilitator received the highest rating (4.75/5), followed by the peer interactions (4.63/5), software representative (4.25/5), and LinkedIn Learning video content (4.13/5). The results indicate that presence of an active leader during the event appears to be highly beneficial. More information on the lead facilitator and his experience was discussed earlier in the case study. However, it should be noted that this facilitator has a pre-existing relationship with some of the event participants

and this may bias the results, even though they were submitted anonymously.

We consider the rating for LinkedIn Learning video instruction to indicate a high degree of satisfaction even though it received the lowest average rating. This lower rating may have occurred since it is the least dynamic form of instruction, where the content itself does not adapt to the individual participants.

Results showed that 75% of the respondents provided assistance to their fellow peers. Along with the high rating for peer interactions (4.63/5), this provides additional support to observational evidence that the peer-enabled interactions occurred frequently during the event. This interaction can help provide some students with an opportunity to gain leadership experience and further cement their understanding of the material by assisting other students who may be struggling at a slower pace.

The software representative was only available for part of the event and was not expected to serve a primary role in the instruction. Moreover, the representative did not have any prior experience with the LinkedIn Learning course before joining the event. Regardless, this representative provided useful commentary, particularly when highlighting the discrepancy between the older version of the software shown in the course and the newer version installed on the computers.

Highlight 7: All four types of instruction for the event

were highly rated, but the lead facilitator received the highest average score

Open Feedback

The last section of the survey provided an opportunity for students to give open feedback. Additionally, a final question was presented to determine whether students prefer to engage with video-on-demand (VOD) content alone or in a group setting.

Part 4 Survey Questions:

> Q18. Please provide any feedback on the positive aspects of this event based on your experience.
>
> Q19. Please provide any feedback on the negative aspects of this event based on your experience.
>
> Q20. In the future, would you be interested in attending another group event or would you prefer to watch e-learning videos individually?

Based on the survey results, 62.5% of the respondents indicated a preference for group-based events, while 25% indicated a preference for learning individually (one

respondent indicated no preference). Although this sample is based on only one event, it provides evidence that there is an appetite for creating group events based on VOD resources.

> **Highlight 8:** More than half of the respondents prefer group-based events over individual learning with VOD.

Several positive aspects of the workshop that were mentioned as part of the open feedback include a collaborative learning environment and the assistance provided by the lead facilitator and the software representative. These results indicate that the various types of instruction were all useful elements of the workshop.

The pace of the instruction was viewed by different attendees both as a positive aspect of the event and a drawback, with one respondent indicating that the pace was too slow at times. During the event, some of the attendees felt that the instruction speech in the video was too fast to clearly understand. The videos were subsequently slowed down to 75% of the regular speed as the LinkedIn Learning videos can be adjusted with 25% increments. However, it would have been more beneficial to provide finer speed control adjustments, such as 5% increments, since many of the existing video speed settings are not practical based on the workshop experience.

> *Highlight 9:* A greater control of video pacing may help maintain a balance that is suitable for the majority of participants.

Another drawback mentioned by a respondent was the lack of challenge to motivate learning. One potential solution is an additional quiz system as discussed in the next section. A quiz could provide immediate feedback on how well the participants are absorbing the information. Additional thoughts on this are discussed next in the pedagogical reflection section.

Pedagogical Reflections

After considering the observational experience from the workshop and collecting results from the participants' feedback survey, several major themes have developed, which are explored further. These include: (1) providing a sufficient challenge to participants; (2) the functional adequacy of the event space; and (3) the usefulness of video-on-demand (VOD) content for collaborative learning environments.

Providing a Sufficient Challenge

The LinkedIn Learning course in this case study included

"challenge" questions that were provided occasionally at the end of a course chapter. However, student feedback indicated that there was not a sufficient level of difficulty. For context, it is important to remember that this workshop was attended by upper year undergraduate and graduate engineering students. Other participants may have different experiences with the level of difficulty.

One reason for the above-stated opinion regarding course difficulty was identified as a lack of defined questions with corresponding answers. Instead, the course challenges typically included open-ended elements and therefore did not provide any confirmation of student learning. This does not indicate that open-ended questions are not useful, since they allow students to refine their problem-solving skills, but rather that the existing approach could be used in tandem with a quiz system. A quiz will consequently provide the facilitator of the event with real-time feedback about student learning before proceeding to the next video based on student answers.

The existing challenge system in the LinkedIn Learning course presented the students with multiple objectives and an unclear path to reach them. However, a defined overarching objective is not provided at the beginning of the course to set the overall direction of the challenge. This could be improved by placing an initial discussion of the challenge at the onset of the course, providing students with defined goals to reach the objective. In addition, consistently informing students of their progress toward the final objective will help build their confidence

throughout the course and provide excitement as they make progress.

Another potential idea to improve on the original workshop format is to separate activities into a two-day hackathon event. For example, the first day could be used to learn the course content, while the second day would require the participants to apply open data toward the solution of a real-world problem (Reichental, 2016). Due to the easy navigation features of LinkedIn Learning courses, the video content would remain very useful on the second day as reference material for participants. For example, the transcript notation is particularly helpful since keywords can be quickly searched to find important content in the videos. This event format would require a greater level of participation from facilitators on the second day to help guide participants as they progress, but would ultimately lead to an improved understanding of the course materials.

Room Layout and Line of Sight

The functional space for the workshop was a new layout after the recent addition of computers to an existing classroom (see Figure 1.1). The main problem with the space was that desks were configured so that students faced outwards toward the exterior walls. Since a direct line of sight with the main projection screens was not available, this led to participants choosing sub-optimal approaches. For example, some of the students would turn away from their own computer to watch the main

projection screen while the video was playing. When a pause occurred, these students would turn back to their computer to perform the demonstrated actions. As a second option, some students would spend most of their time viewing their own computers while listening to the audio. However, the majority of students were observed performing some mixture of the two previous approaches. It was clear during the event that direct line of sight with the instructional video and their lab computer would be advantageous to participants if available.

One option to provide an optimum line of sight is to consider different room layouts. For example, one option for the existing space is to move the horseshoe configuration of the computers inwards slightly and place the students along the exterior, facing in. The middle space would be reduced in size; however, this area was only used minimally for lunch, a function that could be easily moved to a different room if necessary. With this revised layout, the middle space becomes less useful for other event formats (for example, lecture presentations) due to the reduction in student seating capacity. Another layout that could provide a better line of sight is a stadium configuration, with all computer desks rearranged to angle towards the front. This approach would virtually eliminate the current multipurpose space in the centre of the room by filling the space with computers.

Another option to improve the direct line of sight without impacting the multipurpose layout of the room is the addition of a second monitor for students. This is difficult to achieve based on the current configuration of the room

since there is no space available at each desk for an additional monitor. However, there is potential to add displays to the walls that could then be used to duplicate the projection screen at the front of the room. To save costs, each monitor could be placed between two existing computer screens and shared by multiple students. Currently, the exterior walls where additional monitors could be placed consist of whiteboards that are no longer functional due to the obstructions caused by the existing desk and computer arrangement. Therefore, this approach would maximize the utilization of space that is currently unused while keeping the middle space available for other multipurpose uses. In this regard, the addition of monitors to the room walls would be the most effective option, even though an additional cost would be incurred to purchase and install additional equipment.

Collaborative Learning Environment

A final pedagogical area worth exploring is the added value of adapting video-on-demand content for group events. The LinkedIn Learning courses exist as a resource for individuals to utilize as needed on their own time. However, the results of our survey indicate that more than half of the participants would prefer to participate in another group event instead of viewing the content individually. Based on this result, we would encourage further resources to be placed on adaptation of the LinkedIn Learning courses, with the inclusion of features that enhance a group experience since these were not

readily available for this event. Suggestions have been made above to include a stronger optional quiz component that can actively engage and challenge the students while providing a useful feature for a group facilitator to understand the current learning progress of the group participants.

Additional instructions for group-based events provided by the course author and LinkedIn Learning would be useful for facilitators to adapt the existing content intended for individuals. They could include suggestions for activities that can be added, such as group discussions around key concepts or hackathon events. As seen in the results of this case study, the facilitators and peer interactions were rated higher than the video content itself. This illustrates the added value of adapting LinkedIn Learning courses for group events.

Conclusions

This case study has reflected on the outcomes of an event that was designed to adapt a video-on-demand (VOD) LinkedIn Learning course for group-based collaborative learning. The outcomes of the workshop were analyzed based on observations taken during the event, experiences facilitating the event, and feedback from a survey given to the event participants.

This was the first time that the authors had designed an event around VOD content. However, the overall survey results indicate a high level of enthusiasm for the

workshop. In addition, four types of instruction were utilized, including a lead facilitator, software expert, peer interactions, and video content, and each was considered favourably by the participants. Each form of instruction received a rating higher than 4 out of 5, with the lead facilitator receiving the highest rating. As a result, the leadership skills of the student facilitator were improved by taking part in the event while simultaneously enhancing the experience of the participants. In addition, there is evidence that the participants preferred a group setting over individually viewing the VOD materials. Due to this finding, we believe that there is a value-added component to group events that positively offsets the effort required to plan and execute such an event.

The collaborative learning workshop conducted for this case study provided students with an opportunity to learn a new skill that can help them with the pragmatic goal of employment in their chosen field after graduation. Furthermore, this event also provided students with a convenient starting-point for lifelong learning since free access to LinkedIn Learning content provides continuous opportunities to students after the conclusion of the workshop. Several of the students have indicated that they did indeed continue engaging with course content that could not be completed during the workshop due to time constraints.

Based on the results of this case study, we encourage the development of resources to accompany VOD material that provides optional tools and advice for the adaptation of content to group events.

List of LinkedIn Learning Videos

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2. Producing Podcasts as an Alternative Method of Student Assessment

BRITTANY STARKMAN

Abstract

This chapter explores the process of utilizing LinkedIn Learning to teach students how to create their own podcasts as an alternative method of student assessment. The research takes place within a blended graduate-level course where the faculty member wishes to incorporate a podcast assignment but lacks the time and proficiency to teach the audio technical skills effectively. The hope is for LinkedIn Learning to bridge the knowledge gaps and act as an efficient training tool. The findings present a vast increase in student understanding of podcasting. The case concludes that LinkedIn Learning, when complemented by hands-on collaborative practice, is an effective resource in teaching students the skills necessary to produce their own podcasts. Both the

students and the faculty member report the process of producing a podcast as being valuable for developing new skills and expressing their research in innovative forms.

Introduction

University courses often include communication skills as an integral component of course learning outcomes, yet students are rarely provided with opportunities to express their understanding of the course materials outside of the conventional essay or in-person presentation. For many faculty members, the challenge is not in creating other forms of assessment but rather in the technical knowledge required to support students in producing knowledge differently. One example of this is the production of a podcast. This case explores the incorporation of LinkedIn Learning as a co-curricular tool to support faculty members who aspire to include podcasting as an alternative form of student assessment within their courses. This chapter will discuss the process of implementing LinkedIn Learning, exemplary practices

when introducing a student-produced podcast assignment, the learning outcomes, and both student and faculty perspectives of the experience.

Background

Within the Teaching Commons at York University, I lead workshops on educational technologies for faculty members, staff, and teaching assistants. I ran several workshops and webinars on Podcasting for Teaching and Research. The workshops and webinars provided faculty with an overview of how to use audio production software, discussions of how podcasting can be used within higher education courses, and suggestions about how to use podcasting as an alternative assessment to written assignments.

As a result, faculty members were inspired to design podcasting assignments for their own students. One faculty member, who was teaching a blended graduate-level course, expressed explicit interest in replacing her research essay assignment with a podcast assignment. However, her class only met a handful of times face-to-face and her knowledge of audio production was introductory. Therefore, the incorporation of LinkedIn Learning as a teaching tool was the perfect solution to teach the necessary audio technical skills. I assisted this faculty member by integrating LinkedIn Learning into her coursework as a training tool to provide students with the knowledge required to create their own podcasts.

The LinkedIn Learning course we provided students was titled Learning Audacity by Garrick Chow (2016). Audacity is a free, open-source audio production software that is accessible for download on any computer platform. In comparison to other introductory audio tools, Audacity is very simple to navigate. For these reasons, it was an effective choice for novice audio producers. By engaging with the LinkedIn Learning course students would learn how to record, edit, import and export audio using Audacity. These are all necessary skills to understand in order to produce a podcast. It is important to note that the instructor for the Learning Audacity series refers to podcasting briefly within the videos as an example of what can be recorded, however the instructor does not address how to produce a podcast explicitly. Therefore, further guidance of what makes a strong podcast was needed in order for students to successfully develop this assignment. An overview of this process will be explained within this chapter.

Incorporating LinkedIn Learning as a teaching tool was expected to alleviated reliance on face-to-face training during class time. Instead, students would be offered on-demand, just-in-time technical training on a variety of podcasting-related topics that could not all be covered in a single synchronous session. This was especially helpful for this blended style course as each face-to-face session was prioritized on debriefing course material. In addition, as the faculty member was relatively new to podcasting, the Learning Audacity series would fill the knowledge gaps. Therefore, both the students and the faculty member would be able to learn from LinkedIn Learning

and improve their skills collaboratively through this assignment.

The Podcast Assignment

During one face-to-face session of the class students brainstormed themes within the course content to be potential topics for podcast episodes.

In groups of three, students were responsible for choosing one of these topics to address and develop into one audio-based podcast episode from start to finish. Small groups were beneficial for this style of assignment as students could work collaboratively to develop their new skills as audio producers. The final podcast was to be approximately 10 minutes in length. The students were responsible for collecting research on their topic, developing a script, conducting interviews, recording voice-overs, and editing their podcast together using Audacity.

In order to encourage student-directed learning, the faculty member chose to leave the tasks open-ended. The results were interesting: some students divided their work evenly among the group members, while others chose a particular task they felt a passion for. For example, some students preferred to record and conduct interviews with subjects within Audacity, while others preferred to focus strictly on audio editing. Once the podcasts were fully produced, they would be played in class and, with student

permission, shared with the wider York University community.

Technical Recommendations

In order to produce a podcast, it is important to understand what technology is required. Students must have access to a computer or laptop onto which they can download the Audacity software. Students will also need a microphone source to record their audio, access to headphones for production, and a quiet place to record.

Students have multiple options for microphones. The majority of computers and laptops feature a built-in microphone. Built-in microphones are appropriate for beginners as they are simple to use and easily accessible, but for a more professional sound, use of an external microphone is recommended. Alternatively, a smartphone recording application is a helpful option if students are required to record on-the-go interviews. Most smartphones have a recording application by default, but if not, there are many third-party applications available for download. Overall, it is completely up to the faculty member and the students to determine the best way to go about their recordings.

It is highly recommended that students have a pair of headphones available for use while working with Audacity. Recording and editing audio with headphones on will allow users to hear even the quietest of sounds within their recordings. These sounds may be missed

while using the built-in speakers on a device. Lastly, when it comes time to record it is recommended that students find a quiet space with no, or very minimal, background noise. This will increase the likelihood of "clean" recordings and will ensure the sound is more consistent throughout the editing process.

Preparing to Use Audacity

Before the faculty member and I began implementing Learning Audacity into the course, we conducted a brief diagnostic assessment of student understanding. During one face-to-face class session we had a discussion with the students about their experiences with podcasting and using audio production software. Only one student had previous experience using audio production tools and a handful of students had previously listened to podcasts. This was important knowledge to keep in mind in order to understand how we could best support student learning.

Since students had minimal knowledge of podcast creation and production, it was critical to provide an introduction to podcasting and deliver precise assignment expectations. An effective way to begin this process was by giving students the opportunity to listen to multiple podcasts as examples. This could be done within class time or by hosting well-produced podcasts on the online course shell, making it a pre-lecture assignment or required listening. As this was a blended course, the faculty member gave the students the task of

listening to the podcast examples between their face-to-face sessions.

As a recommendation, after students listen to the podcasts, it is wise for instructors to include enough time to debrief with the students on what they heard. This will ensure students become more familiar with the different formats and aesthetics of podcasting. For example, students should note that it is common for a podcast to feature an introduction and an "outro" in which the hosts introduce themselves and then conclude the episode. Students should also notice that between these elements there is opportunity for a wide range of segments. Some examples include a round-table discussion, studio interview, news segment and so forth. There is no direct rule about which segments are mandatory for a podcast. Therefore, students are encouraged to be creative within their productions. Music and sound effects are also common elements within podcast production. However, it is important to be cautious about copyright when importing these external audio files. Fortunately there are resources available online that host open-source music and sound effects.

By following the Learning Audacity videos on LinkedIn Learning, students can learn the skills necessary to import these elements into their podcast, record a variety of segments, and export their podcast into a shareable audio file. The aim is for students to also incorporate the ideas inspired by the podcast examples and classroom debrief to develop their own unique podcast productions.

Learning with LinkedIn Learning

In class, the students were guided on how to access LinkedIn Learning using their organization (York University) credentials in order to begin the Learning Audacity course. As it may have been their first time navigating a video-based learning tool, the faculty member and I presented a walk-through of the interface. It was important to point out the accessibility tools within LinkedIn Learning, such as closed captioning and transcription options. We also mentioned that LinkedIn Learning provides users with the ability to create notes within the interface that can be saved to a specific timestamp on the videos. This can be especially helpful for noting down the name of a particular editing tool or a handy keyboard shortcut. Students were encouraged to export this note as a PDF document to bring to class or to use it as a resource for reference while they work with Audacity. In turn, this process saved students time during the creation and production phase of the assignment.

The Learning Audacity course is quite thorough. This is due to the fact that viewers may be learning Audacity to create a variety of different audio productions. However, since the videos are divided into short topic-based segments, students can easily progress through their learning and choose which video they would like to watch. This also makes it simple for students to refer back to any aspect of Audacity they need to revisit for further clarification.

To ensure that the student podcasters did not feel

overwhelmed by too much information, especially while learning through LinkedIn Learning independently outside of course hours, I assisted the faculty member in creating a resource that highlighted which videos were necessary for viewing and which may be optional. This resource can be found below. It also included hands-on activities to encourage students to practise using Audacity after watching a particular section in the Learning Audacity series. For example, after watching the videos on recording audio, students were encouraged to open a new Audacity session and begin a test recording of their own voice.

Below is the outline developed on Learning Audacity. Links to accessing LinkedIn Learning and the following outline were uploaded onto the online course shell for students to reference at any time.

Learning Audacity Outline

Part 1. Getting Started:

Watch all 4 of the videos within this chapter

1. What is Audacity?
2. Download and Install Audacity
3. Import Audio
4. Play Audio

   ▪ Just a note that the LinkedIn

Learning instructor goes into detail within the Play Audio video. Do not feel like you need to know all of the information. Simply understand how to use the play/stop button (using the space bar as a shortcut) and how to navigate the Audacity timeline.

ACTIVITY: After watching, try out the tools mentioned within the tutorial videos. Ex. Download Audacity, import an audio track (any audio file on your computer will do), and experiment with the playback and zoom tools highlighted within the videos so far.

Part 2. Recording:

Watch the first 4 videos within this chapter

1. Set Up Your Hardware
2. Create a New Project

   ▪ Watch up until 0:35 (where the instructor goes over creating a new project) and fast forward to 05:40 (where the instructor highlights how to save your projects). Watching in between is optional.

3. Record
4. Add Tracks

ACTIVITY: Apply the new knowledge you have learned within this section and record your

own audio track. Ex. Create a new project, set up your microphone and record a voice-over.

Part 3. Basic Editing:

Watch all 6 videos within this chapter

1. Make Selections
2. Cut, Copy and Paste
3. Split Clips
4. Adjust Volume Automatically

   - Watch up until 04:15

5. Use Common Effects

   - Watch up until 03:23 (the rest is optional)

6. Export Your Project

ACTIVITY: Apply what you have learned within this section by editing your audio and exporting the finished project into a shareable audio file.

Part 4. Common Tasks:

You only need to watch 1 video within this chapter. The rest are optional.

(As with any of the videos, read the title and watch whichever sounds helpful for your project)

1. Installing the LAME MP3 Encoder (the name of a third-party application necessary to export an MP3 file in

In this particular case, students were given several weeks to go over the Learning Audacity videos and complement their video-based learning with the hands-on activities indicated in the outline. During the next face-to-face session of the class, students brought in their notes on Audacity and met with their podcast groups. This in-class time was used for collaboration, brainstorming content for their podcast, and working together to practise their Audacity skills. Observations of students during class time confirmed how much they had learned simply by engaging with the Learning Audacity series. If one student had an issue while editing their audio, another peer had the answer. This decreased the reliance on the faculty member to be the ongoing technical support within the classroom.

Outcome

On the day the podcasts were due, there was a class listening showcase. Overall, the podcasts sounded excellent and each group addressed their topic in different ways. Some groups decided to record a round-table discussion, while others recorded interviews with members of the York University community. As an

observer in the room, I could sense the students' excitement. Besides a few giggles from those nervous to hear their own recorded voice played out loud, each group appeared to be very proud of the work they accomplished. The faculty member also participated in the learning and presentation by playing a podcast that she had been working on alongside the students. This truly reflected how LinkedIn Learning could encourage both faculty and students to become collaborative learners in the classroom. With LinkedIn Learning as a resource, faculty do not need to feel pressured to be the sole expert in the room. They can also be involved in the learning process.

After each group played their podcast for the rest of the class, the floor was open for constructive feedback. Students confidently provided their peers with advice on their podcast content, script, audio recording techniques, and editing execution. Hearing the students provide such thorough feedback demonstrated just how much knowledge was gained through this assignment. Students were then able to apply what they learned through the podcast showcase and resubmit their audio file for grading.

Student Perspectives

During the podcast listening showcase, one student commented that the podcast "helped us to put an idea together collaboratively, in a new way, and communicate it with the world." Another student followed this

comment by acknowledging that during a traditional essay she "puts in hours of work for only two eyes to see." What is exceptional about the podcast is that the students are empowered to share their research with an audience. Many students also expressed their appreciation of developing new skills such as audio recording, editing, and the ability to piece together an impactful story.

The students were also given a short, anonymous questionnaire to provide feedback on their experiences using LinkedIn Learning after they produced their podcasts. The questionnaire indicated that students truly increased their understanding of audio production through their engagement with LinkedIn Learning. According to the survey, 54% of students agreed, and 31% of students strongly agreed, that LinkedIn Learning was successful in teaching them how to use Audacity. The other 15% selected neutral as their response, while no participants indicated that they disagreed or strongly disagreed. In addition, all students indicated that their understanding of audio production software improved greatly after engaging with LinkedIn Learning. Almost half of the class (47%) rated their previous understanding of audio production tools as 1 out of 10 (1 being no or very limited understanding and 10 being expert-level understanding). After training with LinkedIn Learning, the majority of students (38%) indicated their understanding to be 6 out of 10, while 30% indicated their understanding improved to 8 out of 10. This is a vast improvement.

When asked if students would use LinkedIn Learning again in the future, one student wrote, "I would use

LinkedIn Learning in the future because it was user-friendly, and I appreciated how informative it was for beginners, like myself." Another student, who works as a teacher outside of her studies, stated, "As a teacher, I would implement it into my classroom and show my students and other educators. LinkedIn Learning is very well organized and straightforward to use." Other respondents mentioned they would use LinkedIn Learning in the future for "help on how to use software, or anything technical in nature" as well as expressing an appreciation of "how thorough and detailed the explanations were."

Faculty Perspectives

As this was the first time the faculty member had incorporated LinkedIn Learning into her classroom, I conducted a short interview to gather her insight on the process after the podcasts were submitted. She commented that she felt LinkedIn Learning was "very helpful and well suited for people ready to start experimenting. I think LinkedIn Learning broke things down into nice, bite-sized pieces which made it easy to navigate." While reflecting on the experience of the podcast assignment, she commented on the similarities between the podcast and a traditional essay assignment. She explained the skill set needed to conduct qualitative research and break the work down to a particular number of pages. She noted how this is extremely similar to the

process needed to create a concise, informative, yet interesting podcast.

In regard to using LinkedIn Learning in the future, she said she would like to use it again in conjunction with additional resources and the hands-on work session in class. Her advice to educators who wish to incorporate LinkedIn Learning to teach podcasting is to "...practise with the tool on your own as well. What's great about these kinds of assignments is that no one's really the expert in the room. We could...struggle together and try to figure out how to do it...For me I had to do a little bit of that work beforehand, but it was really worth it."

Pedagogical Considerations and Reflections

What is very exciting about this style of assignment is that developing a podcast is not vastly different from developing a well-written research essay. Both require pre-production (through planning and research), production (through the writing of the paper or recording of the audio) and post-production (through editing written work or editing audio). They both also take into account word choice, flow, and audience. In addition, students were given a platform to showcase their authentic voice while producing the podcast. They were encouraged to step in front of the microphone, conduct their own research, and show their personality. This is in contrast to the all-too-common regurgitation of facts and

citations from other authors that is characteristic of the majority of higher education course work.

I definitely emphasize the importance of having the expectations for Learning Audacity, and for the assignment itself, to be as clear as possible for students to follow. Podcasting will likely be brand new to many students, so it is important to provide them with examples of well-produced podcasts as a learning resource. This will provide students with inspiration, a better sense of what a podcast includes, and an understanding of the capabilities they have to explore a research area in new and innovative ways.

It is also essential to encourage students to apply their learning by practising with Audacity as they navigate through the Learning Audacity video series. Providing students with the opportunity to work with their podcast groups, collaborate, ask questions, and develop their audio technical skills with their peers during class time is also extremely beneficial. Learning completely through LinkedIn Learning outside of class time is possible, but supplementing video-based learning with hands-on collaborative learning is certainly favourable.

Finally, it is critical to note that continuous feedback is instrumental for this assignment. It is important for educators to provide their students with appropriate feedback in order to continually grow their skills and confidence with this new form of expressing their research. In addition, encouraging students to hear each other's work, provide constructive feedback to one another, and apply this feedback to their own project

instills a deeper understanding. In the end, each learner will have an even stronger project because of it.

Conclusion

The use of LinkedIn Learning as a video-based training tool has proven to be extremely successful in teaching students and faculty the skills required to create their own podcasts. As first-time podcast producers, all learners were able to gather a thorough understanding through their engagement with Learning Audacity, complemented by hands-on practice to develop their own unique productions. This is truly a remarkable achievement and shows how effective learning through LinkedIn Learning can be. There was no need for the faculty member to act as the sole support or spend the majority of class time teaching students audio technical skills. Instead, there was opportunity for independent learning through a flipped classroom model. Students were able to engage with LinkedIn Learning outside of class time and bring their learning back into the classroom to work collaboratively and ask questions.

The incorporation of LinkedIn Learning within this case has provided students with the opportunity to grow their skill set beyond traditional research and writing skills. Students enhanced their 21st century and multimodal skills as they engaged with production software and adapted new ways to present information. While traditionally students often would spend hours

conducting research, developing their citations, and perfecting their essays for an audience of one, opening up the doors to alternative assessments such as a podcast invites students to share their hard work with wider audiences.

The overall accessibility and approachability of LinkedIn Learning has the ability to empower educators to feel more confident in assigning alternative assignments to their students. With short, easy to digest videos on a plethora of software, and the ability to revisit concepts at any time, LinkedIn Learning is a user-friendly learning resource that can be easily incorporated into any classroom.

List of LinkedIn Learning Videos

Chow, G. (2016, December 2). *Learning Audacity* [Video]. Retrieved from https://www.lynda.com/Audacity-tutorials/ Learning-Audacity/518687-2.html

3. LinkedIn Learning as Resource Replacement

Video Tutorials versus Text Tutorials—Which Learning Resource is More Effective?

CHRISTOPHER KOSLOSKI

Abstract

I introduced LinkedIn Learning as a mandatory resource in assignments requiring students to engage with creative software, to investigate whether video-based learning would produce superior learning outcomes for students when compared to text-based software tutorial outcomes. The objective was to provide a textbook alternative to support students who found it difficult to read about using software as a scaffold to then using the software. My informal observations as professor have witnessed higher levels of student engagement with the software by students, increased overall use of LinkedIn Learning as a source of supplementary learning tools, and see a positive impact on student comprehension levels

and subsequent performance on summative assessments.

Key Words

software, video tutorial, text tutorial, comparison, textbook alternative

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Background

Digital Cinematography (DCM) and Broadcasting-Television and Video Production (TV) students need to learn how to use specific software programs to support their creative vision, deliver assignments and meet course learning objectives. In media programs such as these, students are tasked with creating any number of multimedia projects. In broad terms, these short film or video documentary projects go through three distinct phases: pre-production (planning), production (shooting), and post-production (editing). Within these phases, there are many processes to understand and skills to learn. This research examines the use of software tutorials in four post-production courses: a first year DCM video editing course, a second year DCM video editing course, and two sections (one TV and one DCM) of a second-year motion graphics and compositing course. The software programs used in these courses include Adobe Premiere Pro (a non-

linear video editing system), Adobe Photoshop (an image editing program), Adobe After Effects (a video compositing and animation program), and DaVinci Resolve (a program that serves many functions, but for the purpose of these courses it is used primarily as a video colour grading tool). These are standard film industry software programs and can be used to create nearly any moving image imaginable. Although the interfaces on these programs are designed to be intuitive and relatively easy to learn and use, they are nonetheless powerful and complex tools that many new users can find overwhelming—for example, the Adobe After Effects reference manual is 735 pages long. At the beginning of the course I tell students that there is no way for everyone to learn everything that After Effects is capable of in 14 weeks.

The aim of the course, then, is to learn enough about the software to become comfortable with the interface and to become proficient with the tools so students can continue to learn new techniques well after the course is completed. My goal in teaching these software-specific courses is to ensure that students become confident in their ability to use and learn new software. Students come to these courses with their own unique experiences and backgrounds with digital technology. Some students will have solid experience using the same specific software; others will be completely new to using Apple computers and have no experience with similar software. The varying degrees of experience within each cohort could be problematic if complex techniques are discussed early in

the course. Essential digital skills must first be learned in order to complete summative capstone projects.

Wouldn't it be wonderful if students came to the course with some fundamental knowledge of the software to be used?

Process of Teaching a Software-Focused Course

The courses use several layers of engagement with the software, including:

1. Setting the software in context, through classroom discussion, screening film clips, slideshow-supported lectures, and digital notes;
2. In-class demonstration of how to use the software in the application discussed during the lecture;
3. In-class or quick-turnaround assignments where the students use the software following the demonstrated process to the same end result;
4. Assigning one or more large projects, such as a student film or a complex group project, that are supported by the small assignments.

For example, Adobe After Effects (AE) and Adobe Photoshop (PS) are key software programs taught in DCM260 – Motion Graphics. The course culminates with a summative group project showcasing kinetic typography animation. Software is used to animate words on the screen to illustrate dialogue from a movie scene. This is

a complex project with many steps. The result is a video similar to word-driven TV commercials one might see for a furniture store or a text-only public service announcement. Learning basic skills in both After Effects and Photoshop is essential in order to conceive and produce such a project. The following steps outline the process of software skills development as a scaffold to the capstone project.

- Through several small assignments over the first few weeks of the course, students learn how to separate an image into layers using Photoshop, then import the layers into After Effects. From here students will create a virtual three-dimensional space and finally add a virtual camera and send it travelling through the layers of images to create an animated photograph. Fundamental skills in both software programs AE and PS are introduced.
- In the weeks that follow, keyframe animation and titling are discussed in greater depth. The same process is followed: discussion, demonstration, in-class exercises, and short assignments.
- Finally, all of the skills covered over the first weeks of the course come into play to complete a major, student-driven-and-designed kinetic typography group assignment.

Developing fundamental and complementary skills gives students the tools to create a complex project using software that, in most cases, was completely new to them when they came into the course.

Pedagogical Considerations

Click-and-Follow Demos: A Problematic Approach

Leading a class through a software tutorial in a computer lab can present many challenges. Maintaining the focus of the learners is key. When they sit behind computer monitors and explore new software while click-and-follow instructions are provided by the professor from the front of the computer lab, students can easily become distracted and lose focus. With a full computer lab of 34 disparately skilled students, it quickly becomes obvious that the group cannot work through an entire 60-90 minute tutorial in unison. Some students will miss a step in the instruction; some will encounter an unexpected computer issue and will start to fall behind on the tutorial. For example, once I start visiting desks to troubleshoot issues or explain previous steps, the tutorial quickly devolves into running from station to station to solve issues one-on-one. Other students who had been keeping pace will have to sit and wait for further instruction, which increases the likelihood that they become distracted. In over 10 years of experience delivering curriculum in software-driven courses, I have found that the click-and-follow approach just doesn't work. The approach is reasonable for basic instruction or initial project set-up even with a large group of students, but, for larger, more complex tutorials the click-and-follow technique will leave many students behind.

Solution to Click-and-Follow Teacher Demos: Tutorials

If the students were already comfortable using the software when they came to class, we could focus on aesthetics and creative decision making. We could spend more time examining previous works and study the design and execution of complex video techniques. We could spend more time on student projects rather than learning which buttons to press. This would be good for the professor, for the student filmmaker, and for the projects. These ideas encouraged me to introduce software tutorials as a way for students to spend time with the software, to understand the basic principles, and learn the interface, all at their own pace. I used excerpts from software training guides or created new written tutorials based on my in-class demonstrations. These tutorials proved to be an effective learning resource and became a regular component of my software-focused courses. However, I only marked the tutorials on timeliness, organization, and completion. I did not want to be bogged down marking each step. Rather, students would export a project file once the tutorial was complete, often with their initials watermarked into the video. By referencing the creation, open, and final dates on their project files, along with their final exported video, I could quickly score their tutorial work and overall completion rates in the class. After completing the tutorials, students overcame the learning curve and more complex instruction could be delivered in class. This approach has worked very well. If students stay current with their

tutorials, they find assignments much simpler to understand, and ultimately their work becomes more creative as they become less hindered by lack of knowledge.

Students hand in all work, including tutorials, by saving their projects using a pre-determined folder structure (Figure 3.1). Time stamped dates provide data for scoring rubric (Figure 3.2).
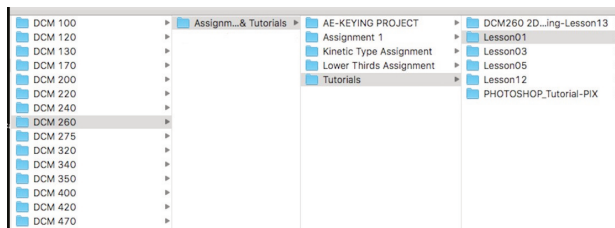
Figure 3.1 Example of student directory on shared computer network
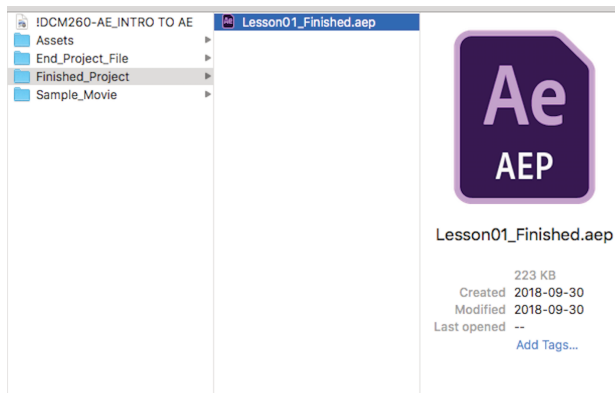
Figure 3.2, Student directory used to share tutorial project file.

Challenges of textbook-based tutorials

There were some issues using PDF text-based tutorials. Some students simply could not learn this way. The act of sitting and reading a series of written instructions, then applying that information to the software in front of them, proved to be too difficult for a number of students. In my experience teaching software, the number of students who come forward with concerns about this type of read-and-follow tutorial has grown. This style of self-directed learning, with the aid of written instruction, does not work for the greatest number of learning styles. Many students in film or TV programs are visual learners and there were several cases of students who presented with an IEP (Individualized Education Plan). Some of these students, for example, may have been diagnosed as dyslexic and may struggle with interpreting written software instruction. In this case, I would ensure that the student was keeping up by providing one-on-one instruction during which I would go through the tutorial step-by-step or provide a video tutorial which covered the same area of study. Frequently these videos came from YouTube and very often did not feature high production quality, presentation by experts, or academic value.

Personal experience using LinkedIn Learning resources to learn software

I have been using LinkedIn Learning as a resource for many years; in fact, it is how I taught myself Final Cut Pro

in the late 1990s. I have been using the service for decades now, both as a filmmaker and a teacher, and I would have suggested exploring the site to students whenever possible. However, without subscriptions to the service, students could not fully take advantage of the resources provided by LinkedIn Learning. I would often use LinkedIn Learning resources to build in-class demonstrations and written tutorials, but most often I referred to the Classroom in a Book series from Adobe. These and other similar textbooks provided useful resources for the tutorial assignments. Although the text-based tutorials were not ideal for all learners, they did help accomplish my goal of having students spend time with the software. Students who successfully completed the tutorials always performed better on the capstone assignments—they learned the software.

In 2017, the the Government of Ontario, in partnership with eCampusOntario licensed the use of LinkedIn Learning for all faculty, staff and students in the public post-secondary system.Because previous research has suggested that video tutorials (non-static images and animations) encourage and enhance learning (DeVaney, 2009), and because LinkedIn Learning is a rich video tutorial website offering well designed courses on hundreds of topics, I was excited at the opportunity to use LinkedIn Learning as a classroom resource and replace the text tutorials I had been using for years. At first, I decided to provide an option to students who wanted to try video tutorials. Later I switched entire courses to video-only tutorials. What I wanted to find out with my research was: Which worked better? What impact do

video tutorials have on students and their comprehension of the software? Does the video format versus the text-based format make a difference in student understanding and mastery of software? Note: All software tutorials, video and text, have always been provided to students with digital exercise files to accompany the lessons.

Text versus Video: Which Software Tutorials Work Better?

Case Question

How do video tutorials, as compared to text-based tutorials, affect the application of software skills in the creative work of Canadore College students in the Digital Cinematography (DCM) and Television – Broadcasting and Video Production (TV) programs?

Applicable Learning Theories

- Adult learning/ andragogy (adult students want information of immediate use)
- Self-directed learning
- Cognitive apprenticeship (students learn from more than one master of a skill)
- Cognitive information processing (cognitivism)

(students can revisit the material at their own pace and frequency)

Research Method

Informal mixed-methods experimental study followed by informal observation, which included an informal pre-test (courses using textbook tutorials acting as control group), followed by intervention (use of LinkedIn Learning video tutorials in subsequent courses), followed by post-test observation by teacher.

Procedure

In order to compare user groups, I examined the use of both traditional and video tutorials in DCM260_02 – Motion Graphics, the TV sections of a second-year course. There were two cohorts in two different semesters/years. This course introduces students to a number of complex image editing and video compositing software programs, including Adobe Photoshop and Adobe After Effects. The Fall 2017 Semester students only had access to text-based tutorials; the Fall 2018 Semester students had an option to use either video or text tutorials for the same programs and to support digital skill development for the completion of the same creative capstone project at the end of the semester.

DCM260_02: F2017 Text Tutorials Only

DCM260_02: F2018 Text or Video Tutorials
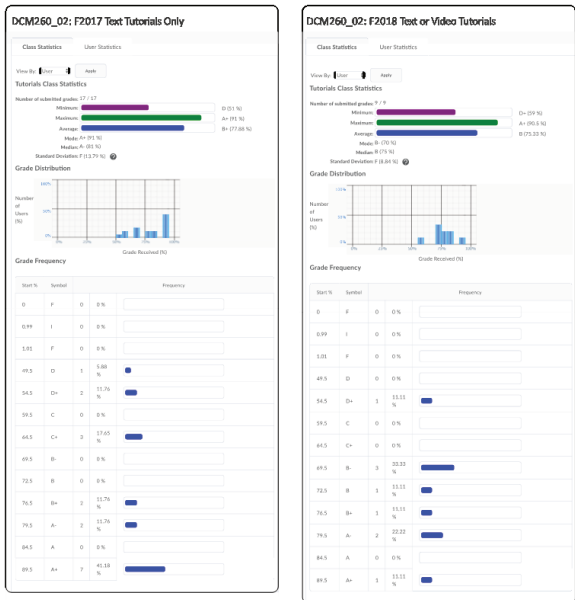
Figure 3.3, Comparison of student performance for software tutorials. Scoring is based on timeliness, project organization and completion. Statistics show similar results in both courses.

For further background on student perceptions of video tutorials, I examined the use of video-only tutorial resources in DCM320 – Post Production III (32 DCM students) where students used LinkedIn Learning resources to learn DaVinci Resolve, a digital film-editing, colouring, and exporting tool. In DCM120 – Post Production I, an introductory video editing course where students learn the ins and outs (editing joke) of Premiere Pro, both video and text tutorials were available to students.

Table 3.1 Tutorials provided to students by course and cohort.

Tutorials Provided	Cohort/ Semester	Course	No. of Students
Video and Text	DCM & TV Fall 2018	DCM260 – Motion Graphics and Compositing	41
Video Only	DCM Fall 2018	DCM320 – Post Production III	32
Video and Text	DCM Fall 2018	DCM120 – Post Production I	33
Text Only	DCM Fall 2018	DCM260 – Motion Graphics and Compositing	23

The first video software tutorial assignment included a mark for the completion of a LinkedIn Learning membership sign-up. Once students had formally signed up, I encouraged them to explore the content on LinkedIn Learning and demonstrated in class how to find and use the video tutorials on the site. A simple search would reveal a plethora of video resources. Students were excited to learn that the service provided information on more than just technical topics, there was also information on the soft skills required in filmmaking. Videos covering disciplines like screenwriting, directing, and documentary filmmaking are also available on the site. Students were engaged.

Students with email or other access issues were encouraged to immediately (during class time) speak to the Service Desk (IT) to have the issues resolved. If an access issue was not dealt with by the student immediately, it could often quickly be forgotten. Because

students with email issues have to contact people outside of their program, they may choose not to do so on their own time. I tried to provide as much support as needed to help students gain access. Issues were not always resolved in a timely manner, and some issues persist at the time of this research. Although most students had no issues in connecting at all, a few could not complete the assigned tutorials because of an IT issue. For these students a text tutorial or accessible video tutorial was provided.
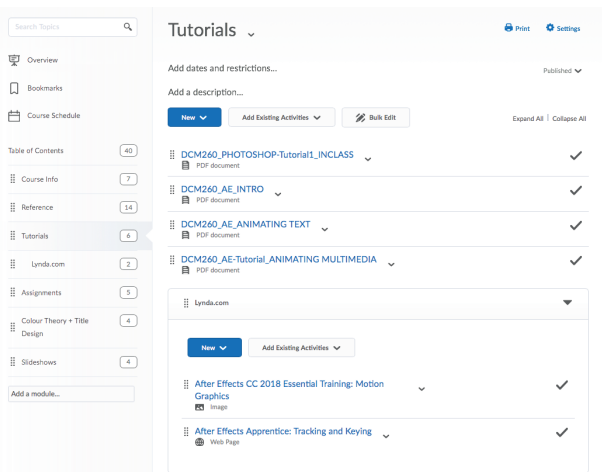
Figure 3.4 Screen capture of Tutorials page from the DCM260 – Motion Graphics online learning environment from D2L called iLearn. See text-based tutorials above, reference to LinkedIn Learning below.

Students were provided access to the tutorials, both text and video, through the online learning environment as

illustrated in Figure 3.1. Links to text-based tutorials would take students directly to a downloadable PDF as seen in this example of text-based tutorial. Links to LinkedIn Learning video tutorials would only show an image of what the tutorial series looked like and included the full name of the tutorial series, which could be searched for within LinkedIn Learning. Exercise files for both forms of tutorials were made available through the local area network and storage system in the computer labs. For students using LinkedIn Learning, exercise files could also be accessed through the site.

Analysis

I have performed an informal observational assessment of student experience and learning outcomes, through primarily qualitative data (student comments, teacher perceptions of quality of culminating projects), and although it is difficult to truly quantify results given the creative nature of the students' capstone projects, I can clearly see improvements in software comprehension through project complexity. Students are trying things in their own work that were only covered in the LinkedIn Learning tutorials. Students are assessed for tutorial completion using the following rubric:

Table 3.2, Example of a scoring rubric for both text and video tutorials

Criteria	Level 5	Level 4	Level 3	Level 2	Level 1	
Timeliness	5 points Tutorial completed on time.	4 points Tutorial one day late.	2 points Tutorial two to three days late.	1 point Tutorial more than three days late.	0 points Tutorial not submitted.	/5
Organization	5 points Tutorial properly organized. All related files are connected and the project opens properly.	4 points One or two media files are offline.	2 points Three or more media files are offline.	1 point More than three media files are offline/ missing or the project file is misplaced.	0 points No attempt.	/5
Completion	5 points All steps in the tutorial are completed.	4 points One step in the tutorial has been missed.	2 points Two or three steps in the tutorial are not completed.	1 point More than three steps have not been completed.	0 points No attempt.	/5
Total						/15

The key criteria are Timeliness, Organization and Completion. Marks are designed to encourage students to complete the tutorials on time and maintain a proper file and folder structure; a critical component in any software-focused course is for students to appreciate the

importance of maintaining file paths and links. The purpose of providing software tutorials for students is simply to encourage time spent with the programs.

In Comparison

The same second year Digital Cinematography student group was provided text only tutorials in DCM260 – Motion Graphics and Compositing, but was given video only tutorials in DCM320 – Post Production.

Figure 3.5 Comparing statistics for the same user group in two courses. Students in DCM260 – Motion Graphics and Compositing were provided five text tutorials only as a learning resource for Adobe After Effects software. Students in DCM320 – Post Production were guided to follow along using digital exercise files from a total of five chapters from the video series, Learning

DaVinci Resolve 14. In total, a comparable amount of time would be required to fully complete the tutorials in both courses.

The evaluation results are similar across the two courses; however, one key difference is the minimum submitted mark. One student achieved a D where text-based tutorials were the only option, whereas in the course with video-only tutorials, the lowest score was a C. There are many factors that will affect a student's performance in any course, including the delivery of the material and the student's attitudes to and perceptions of the material, as well as the timing in the program overall. As the semester progresses, students become more stressed as assignments pile up and their own film projects approach deadlines. However, when software tutorials are provided as a learning resource, students are encouraged to learn the fundamentals of the software in order to support their creative vision for larger, more personal projects. All students in the four courses examined through this research completed at least some of the software tutorials and then applied that learning to their own work.

One unanticipated issue has been the role of the

professor as IT support. Although students quickly adopt the technology and all generally enjoy watching well-produced videos, the first hurdle is having all students complete the subscription enrolment with LinkedIn Learning. The college issues an email from the Service Desk (IT Support), which gives students access to LinkedIn Learning at no cost. However, several students did not receive the email, or lost the information. I would provide time in class for students to attempt to resolve these issues at the Service Desk; however, some still did not gain access after eight weeks. For these students, I would provide a text-based tutorial or alternative video from another source. This is in contrast to the text-based tutorials and their associated exercise files that were provided over our local network in the classroom. All students have instant access to these resources.

Results to date

Summary of Impact

Based on the use of LinkedIn Learning video tutorials as resource replacement for software tutorials, the impact can be summarized as follows.

1. Positive student engagement, comprehension, and self-direction:

- Positive adoption rates and student reviews

- Increase in supplemental self-directed learning (students explore the site and find other resources)
- Increase in comprehension demonstrated in the quality and complexity of related assignments
- Increased student engagement and joy in learning: students say they don't consider assigned LinkedIn Learning courses as requiring the same level of "work" as other assignments

2. Unanticipated issues

- The role of professor as IT support (troubleshooting issues reduces teaching time)
- Distraction (when students are online, many find it difficult to focus)
- Marking (deliverables are less defined with video tutorials, making assessment more time consuming)

Conclusions

Truly the aim of providing, assigning and evaluating software tutorials is simply to encourage the use of specific software by the students. The sooner students learn the software, the more efficient they will be when using these tools in creating their own work (Kafer, Kulesz & Wagner, 2017). Software tutorials provide students with learning resources in order to bridge the software application learning curve. This allows class contact time to be focused on application of the software rather than fundamental operation. It is clear that both video and

text tutorials have their advantages. Once the service is made available, video tutorials are simple for students to engage with and begin the process of learning software fundamentals. For most students, watching a video does not appear to be as onerous as having to read a chapter from a book and follow written instructions. Text-based tutorials however, are much faster in getting to the point of the exercise and also provide an effective resource when specific techniques need to be recalled later.

I originally first made video tutorials an option for students who struggled with text-based tutorials. Some people are visual learners and video provides an excellent alternative to text, with similar results in completion and comprehension. Using LinkedIn Learning as a resource has provided the students with quality video tutorials that are delivered by experts. The format of the site is consistent and simple to integrate into the course, and the breadth of information is astounding. However, there is still a place for text tutorials. In my observations, advanced students working on complex projects often preferred the text tutorials, as the desired information can be quickly accessed without scrubbing through introductions and conversation in the video.

The best possible way to teach software is to sit one-on-one with a student and go through all the steps and processes. Because time makes this an impossibility, providing tutorials as a learning resource is the best way I have discovered to teach fundamental digital skills. Both text and video tutorials are effective and can be used to complement one another to provide learners choice.

Next Steps

I am working on a plan now to formalize video tutorials as an alternative learning resource in all software-driven courses. Making options for text and/or video tutorials available to all students, provides the greatest opportunity for adoption. Students can help create their own learning plan by choosing which type of tutorial they prefer, adding another layer of engagement.

List of LinkedIn Learning Videos (Used by Course)

DCM260 – Motion Graphics and Compositing (Fall 2018)

Demafiles, A. (2018, May 7) *After Effects CC 2018 essential training: Motion graphics* [Video]. Retrieved from https://www.lynda.com/After-Effects-tutorials/After-Effects-CC-2018-Essential-Training-Motion-Graphics/625925-2.html?srchtrk=index%3a1%0alinktypeid%3a2%0aq%3aAfter+Effects+CC+2018+Essential+Training%3a+Motion+Graphics%0apage%3a1%0as%3arelevance%0asa%3atrue%0aproducttypeid%3a2

Meyer, C. & Meyer, T. (2016, November 10) *After Effects Apprentice: 12 tracking and keying* [Video]. Retrieved from https://www.lynda.com/After-Effects-CS4-tutorials/

After-Effects-Apprentice-12-Tracking-and-Keying/
79648-2.html?srchtrk=index%3a1%0alinktypeid%3a2%0a
q%3aAfter+Effects+Apprentice%3a+Tracking+and+Keying
%0apage%3a1%0as%3arelevance%0asa%3atrue%0aprodu
cttypeid%3a2

DCM320 – Post Production III (Fall 2018)

Inhofer, P. (2018, April 12) *Learning DaVinci Resolve 14* [Video]. Retrieved from https://www.lynda.com/DaVinci-Resolve-tutorials/Learning-DaVinci-Resolve-14/704152-2.html?srchtrk=index%3a1%0alinktypeid%3a2%0a q%3aLearning+davicni+resolve%0apage%3a1%0as%3arele vance%0asa%3atrue%0aproducttypeid%3a2

DCM120 – Post Production I (Fall 2018)

Kennedy, A. (2018, June 12). Premiere Pro CC 2018 essential training: The basics [Video]. Retrieved from https://www.lynda.com/Premiere-Pro-tutorials/Premiere-Pro-CC-2018-Essential-Training-Basics/624346-2.html?srchtrk=index%3a1%0alinktypeid%3a2%0a q%3apremiere+pro+cc+2018%0apage%3a1%0as%3areleva nce%0asa%3atrue%0aproducttypeid%3a2

References

Kafer, V., Kulesz, D., & Wagner, S. (2017). What is the best way for developers to learn new software tools? An empirical comparison between a text and a video tutorial. *The Art, Science, and Engineering of Programming, 1*(2), art. 17, https://doi.org/10.22152/programming-journal.org/2017/1/17 https://doi.org/10.22152/programming-journal.org/1/17

DeVaney, T.A. (2009). Impact of video tutorials in an online educational statistics course. *Journal of Online Learning and Teaching, 5*(4), 600–608, https://www.researchgate.net/publication/255621278_Impact_of_Video_Tutorials_in_an_Online_Educational_Statistics_Course

4. LinkedIn Learning as Professional Development

Educator as Learner

JENNIFER ROUSE BARBEAU

Abstract

Teaching adults full-time while simultaneously keeping hands-on skills current in complex, fast-moving fields is a real challenge faced by many college professors. In May 2018, I planned, requested, and completed four days of professional development (PD) training using seven LinkedIn Learning technology-focused video courses, totaling over 31 hours of video viewing. The experience was both humbling and productive. Despite working full days, I completed 58% or less of each of four selected LinkedIn Learning courses over four days, abandoning three courses altogether and adding one course impulsively on Day Two. My poor completion rates were predictable given my failure to plan for scaffolding my own learning. I completed only 21% of my original goal. Was my ambitious target setting evidence of professorial arrogance, the assumption that I could learn more

efficiently than my students? I was surprised by the strategies that helped keep me on task, and encouraged to see that my retention rates have been high.

Ultimately, I found LinkedIn Learning to be an efficient way to revisit and confirm industry-specific approaches, strategies, and current trends sufficiently to bring that learning to classroom teaching in industry-specific courses. This PD practice made me a better, more realistic teacher to my present and future students. Lessons learned? Request four to five times the total video-viewing hours as total PD time, or conversely, select videos to fill only 20% to 25% of the total PD time. For example, in a five-day PD window, plan for a maximum of eight to 10 hours of video viewing time, with the balance of the 40 PD hours protected for note-taking and hands-on software practice.

Key Words

asynchronous, autoethnography, bodily-kinesthetic intelligence, chunking, Cornell notes, intrapersonal intelligence, professional development

Background

Before becoming a teacher, I studied illustration and advertising, then worked as a graphic designer and art

director, and ultimately added journalism and short story and novel writing to the mix. More than 20 years ago, I responded to a call by a college for continuing education courses and teachers, and for several years shared my love of interior design with students taking general interest night courses. Eventually I moved into a marketing position in the college system, and then, when a full-time teaching position in Advertising and Marketing Communications came up at a nearby college, I took the plunge and became a full-time college professor.

Full-time teachers in the college system work up to 44 scheduled hours per week during the academic year, a total that includes teaching-contact time (hours in the classroom), preparation and marking time, and general administration time. This means the work week is very full. I have found it daunting to keep up with design technology and social media marketing trends in addition to these 44 hours per week; by necessity, academic requirements, advising students, and program coordination take priority. Although I teach a wide variety of software-specific courses only once per semester, it is important that I keep my skills current by exploring software and industry-specific platforms. Luckily, our contract gives full-time professors 10 days of professional development (PD) per academic year. I have attended design-related conferences with the support of my college's PD funds, but I have found it challenging to find targeted PD that includes time for hands-on exploration of design software. It is important to me to identify PD that fits into the annual faculty 10-day window, and also supports skill building for several technology-based

courses. But more often than not, I was reading textbooks on Adobe Creative Suite, Microsoft Project, social media strategies, and media buying on my own time, instead of requesting more formal PD for software skill building. Textbook reading seemed too flimsy a resource to submit as a PD request. And so my practice sessions took place infrequently, for brief stints and without formal scheduling. This approach interfered with a healthy work/life balance and also left me feeling that I needed more time with the tech tools that are so important to the fields I am preparing students to enter.

Introduction

When LinkedIn Learning became available to every college faculty member, student, and staff member, we were encouraged to use it. A quick look through the LinkedIn Learning library confirmed that many resources existed to provide the software immersion time I craved. Still, I had two questions about LinkedIn Learning's place in my professional development.

Research Questions

1. Would time with LinkedIn Learning video courses be recognized by my college as credible PD?
2. To what degree could LinkedIn Learning support my professional development in design, project

management, and digital marketing management, within a compressed timeframe (that is, the maximum window of five consecutive days allowed by our faculty collective agreement)?

Teaching and Learning Objectives

- Identify current, high-quality, industry-specific skill development training at no cost
- Schedule up to five consecutive workdays devoted to PD to meet the requirements of my collective agreement, namely that of discussion with and approval by my associate dean
- Revisit, explore, confirm, and develop industry-specific skills required for the ongoing teaching of industry-specific courses
- Explore current trends and tools in a compressed timeframe

Method: Autoethnography

I conducted informal qualitative research, acting as research author and sole active research participant. I used self-reflection and writing to explore my personal PD experience using LinkedIn Learning video-based training, and to connect it to a wider professional, personal, and cultural workplace context.

Procedure

On March 22, 2018, I signed up for LinkedIn Learning in order to search the LinkedIn Learning library for appropriate courses for a PD request. I uncovered several excellent choices and made a list of courses that, when combined, covered four workdays. (Note that the 2017-18 school year was a strike year in which only nine PD days were allowed.)

I sent an email request to my associate dean on Tuesday, May 8, 2018 at 4:38 p.m., asking for four days of professional development for the 2017–18 academic year, to take place in the non-teaching period from Tuesday, May 22 to Friday, May 25, 2018, off campus (at my home). A Professional Development Authorization form in PDF, showing no related costs, was attached to my request, along with a detailed list of the seven LinkedIn Learning courses I planned to complete (see Figure 4.1). The email also included a list of the five days of training I had already completed in 2017—18.

As part of my professional development for the 2017-18 academic year, I am requesting the following:

- 4 days to complete LinkedIn Learning training (31 hrs 18 min)

- Tuesday, May 22, 2018 to Friday, May 25, 2018
- Off campus (at my home)

Subjects:

Day 1:

Online Marketing Foundations with Brad Batesole

Learn today's online marketing techniques and find out how to build a successful online marketing campaign for all digital...

3h 48m Beginner Views: 4,987,875

Photoshop CC 2018 Essential Training: The Basics with Julieanne Kost

Learn about the core features of Photoshop CC 2018, from interface basics to key concepts that all Photoshop users should know, regardless of how they use the program.

4h 41m Beginner Views: 744,307

DAY 2:

WordPress Essential Training with Morten Rand-Hendriksen

Learn how to create your own feature-rich blog or website with WordPress. Find out how to schedule posts, customize themes...

5h 27m Beginner Views: 5,805,122

Project Management Foundations with Bonnie Biafore

Learn project management techniques to effectively manage simple projects and complex enterprise-wide initiatives. This course...

3h 20m Beginner Views: 4,777,106

DAY 3:

InDesign CC 2018 Essential Training with David Blatner

Learn InDesign. This essential training course steps you through the world's premiere page layout app, Adobe InDesign.

6h 30m Beginner Views: 662,321

DAY 4:

Google AdWords Essential Training with Brad Batesole

Set up your first AdWords campaign and learn how to get more visitors to your website and more value from your PPC spend.

3h 28m Beginner Views: 1,782,941

Illustrator CC 2018 Essential Training with Tony Harmer

Learn to use the world's leading illustration and vector drawing application — Adobe Illustrator — to create artwork for print, for the web, or for use in other applications.

4h 44m Beginner Views: 708,765

Figure 4.1, Pedagogical Development Agenda: The email I sent to my associate dean on May 8, 2018 acted both

as support for my PD request, and as a self-proposed agenda for my four continuous days of study.

Approval by my associate dean was received by email on Wednesday, May 9, 2018 at 5:28 p.m. I began LinkedIn Learning training on Tuesday, May 22, 2018 on my work laptop at home so that I would have access to current Microsoft Project and Adobe Creative Suite software. I kept handwritten notes. Handwritten notes allowed me to regroup information as I listened to the audio portion, enabling me to toggle my attention between the video visuals (including the running text) and my own, tactile visuals.
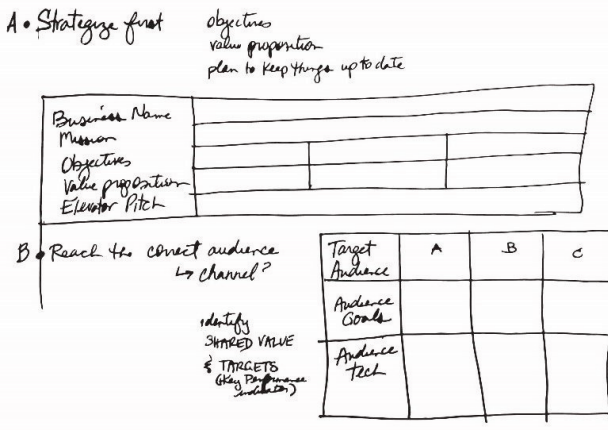
Figure 4.2, Regrouping information in handwritten notes

Speech bubbles, cloud shapes, squares, and lists with a variety of formatting and levels were tools used to "chunk" information visually; notice how key points are written in the far left margin, while general notes take up a wider right-hand column, with a summary block at the bottom of the page.
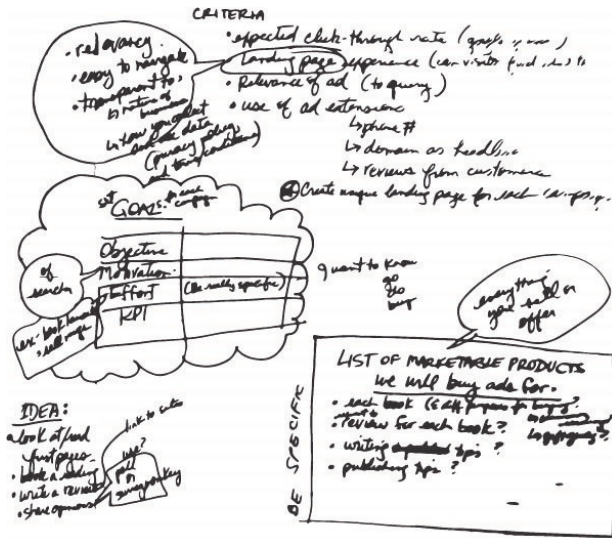
Figure 4.3, Shapes and frames in handwritten notes

The 16 pages of notes I made used a variety of visual formats that were instinctive and not unlike Cornell notes (Gonzalez, 2018; Donohoo, 2010), a visually organized note-based summarizing technique I did not know at the time my PD took place. A typical Cornell notes approach divides a note-taking page into three parts, with key points placed in a narrow column on the left, general notes filling a wider right-hand column, and a summary of the topic set along the bottom.
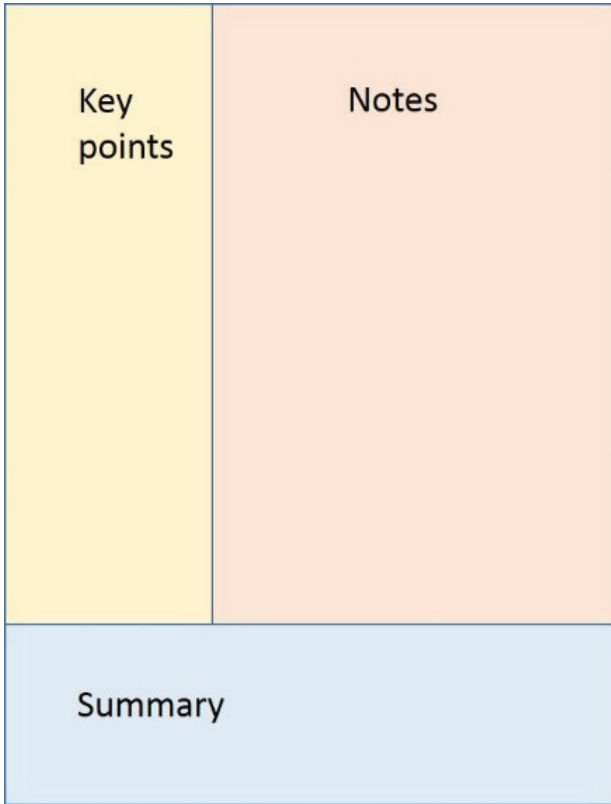
Figure 4.4, Cornell notes layout

I worked eight hours or more per day on the selected LinkedIn Learning courses. My learning process was fourfold:

1. I watched the videos;
2. I listened to the videos;
3. I read along with the text as it was highlighted;
4. I created 16 pages of handwritten notes to highlight key concepts, using various shapes and organizational levels to simplify and regroup

information.

A fifth process happened simultaneously: I fidgeted tremendously in my chair, standing, sitting, lifting my legs onto the chair, kneeling on the chair, leaning on the desk, crouching with my feet on the seat of the chair, and so on. I was aware of my inability to "settle down."

Research into the impact of sedentary leisure activity (screen or non-screen time, sitting) on working memory and academic performance suggests that 10-to-20-minute breaks from activity on weekdays seem to bolster academic performance overall, while longer weekend breaks actually seem to impede working memory (Féliz Nóbrega, 2017). Physical activity in general is a contributor to cognitive development, including working memory and brain maturation in children, even those with Attention Deficit Hyperactive Disorder (ADHD) diagnoses (López Vicente, 2016). Doing (also labelled experiential learning) improves performance on delayed tests, especially when doing includes judging and selecting activities (Kaneko, Saito, Nohara, Kudo, & Yamada, 2018).

That said, there is evidence that brief rests during workdays, as well as physical activity (in general and while learning), support the retention of concepts. In retrospect, I speculate that my fidgeting provided physical activity that not only allowed me to remember more of what I learned, but also afforded a physical outlet to counterbalance the passive activity of video watching. As a result, my energy levels stayed high throughout these eight-hour periods of intense mental activity. In the words

of Llinas (2001, as quoted in Lopez Vicente, 2016), **"That which we call thinking is the evolutionary internalization of movement."**

Results

My plan was overly ambitious. I had scheduled four 8-hour days to complete a total of 31 hours, 18 minutes of course viewing (97.8% of my allotted PD time). I spontaneously added an eighth course on Day Two, increasing the total LinkedIn Learning running time to 32 hours, 48 minutes, or 102.5% of my allotted PD time. I hadn't factored in time for trial of the software as I worked through the lessons, nor had I considered time for reflection and exploration to consolidate learning.

Though I worked for eight hours or more each PD day, I completed between 27% to 58% of each LinkedIn Learning course I viewed. By the middle of Day One it became evident I could not complete the full range of courses within my anticipated timeframe. Ultimately, I worked on only four of the original selected courses, abandoning the exploration of three courses altogether. I added one extra course on Day Two, but short as the course was at 50 minutes, 22 seconds, I completed only one-third of it.

Subjects:

DAY 1:

Online Marketing Foundations
 with Brad Batesole
Learn today's online marketing tech
3h 48m Beginner Views: 4,987,875

7 of 12 modules completed

Photoshop CC 2018 Essential Training: The Basics
with Julieanne Kost
Learn about the core features of Photoshop CC 2018
4h 41m Beginner Views: 744,307

DAY 2:

WordPress Essential Training

GDPR for Marketers
with David Booth
Learn how the GDPR affects marketers ...
50m 22s Beginner Views 34,523

Completed 1 of 3 modules

Project Management Foundations
with Bonnie Biafore
Learn project management technique
3h 20m Beginner Views: 4,777,106

Completed 2 of 11 modules

DAY 3:

InDesign CC 2018 Essential Training
 with David Blatner
Learn InDesign. This essential training course ste
6h 30m Beginner Views: 662,321

13 modules

4/13 completed

DAY 4:

Google AdWords Essential Training
 with Brad Batesole
Set up your first AdWords campaign and learn h
3h 28m Beginner Views: 1,782,941

2, 10 modules

Illustrator CC 2018 Essential Training
 with Tony Harmer
Learn to use the world's leading illustration and
4h 44m Beginner Views: 708,765

My notes (Figure 4.5) reflected completion rates for each course I tackled, with the exception of the final Day 4 efforts, during which I took six pages of notes, but did not record how many modules I was able to complete in the day's eight-hour timeframe. A subsequent check of my

notes against content confirms that I completed four of 10 modules. The coloured block indicates an outlier course that was added on impulse on Day Two.

Pedagogical Considerations: Learning Theories in Practice

Compared to other forms of PD, such as attending a conference or completing a traditional multi-week course, using the LinkedIn Learning video library as PD content provided more opportunity for deliberate reflection, before, during, and after the specified PD timeframe.

A key challenge for me as an educator is to anticipate and scaffold learning for a wide range of students. In selecting autonomous learning via LinkedIn Learning for my own PD, I failed to plan for scaffolding my own learning. The resulting outcomes — abysmal completion rates, abandoned courses, and bruised self-esteem — instigated reflection upon my own learning and, more positively, informed my understanding of the student experience. My struggle allowed me, as an educator, to explore the question of how I (and similar others) could and would learn. This process also allowed me to identify barriers to my own learning and ultimately to my own teaching. Had I simply been too ambitious in my targets? Could my low completion rates be equated with low persistence, even though I had invested the allotted eight hours per day? How often had similar ambitions and presumptions by

me, the teacher, led to demonstrations of what looked like low persistence in my students, and, if that were true, how fair an assessment was it to assume that low completion rates meant a lack of time invested?

My initial goal was to integrate additional knowledge with my existing knowledge, efficiently, over a constrained time period. That strategy seemed simple: expose myself to mastery-level teachers to whom I had access via video, and so also enjoy the luxury of rewinds and side explorations while I worked in the comfort of my own home. Paradoxically, I did not factor in time for those rewinds or explorations. In practice, my PD involved more than the exposure-only learning I had planned; it also forced me to consider what autonomous learning looks like, at least for me, an experienced student who earned a Master of Education degree as recently as 2016. And so I engaged in meta-learning: LinkedIn Learning learning and also participatory learning about learning.

Key questions arose as I worked. Was it realistic to self-assign more than eight hours daily of video viewing? How much watching is learning? Is passive learning enough? What tactics could scaffold my own learning? How much time was really needed?

Right from the start, the process of reviewing and selecting video courses to fill an intensive four-day period of concentrated professional development allowed me to reflect on my goals and make decisions about the scope of learning I would tackle. It is interesting to me that I ultimately chose to revisit subjects with which I was already quite practised. Not unlike post-secondary

students, I chose to add to my existing knowledge rather than tackle areas where I might have perceived a greater gap between what I knew and what I would need to know (Lenarcic Biss & Pichette, 2019). It is also interesting that I set such ambitious targets. As an educator with more than a quarter-century of experience, did I truly expect to simply soak up learning without doing or reflecting?

Time itself was a player. As I worked, I was essentially under the tutelage of experts who were nonetheless unavailable to me except in their asynchronous form. We could not discuss; I could not ask questions. There was no time for me to process a concept, and no opportunity to reflect it back in words or demonstration to instigate feedback or clarification from the teacher, the video expert. The work day began and ended at essentially the same time it would have had I been on campus, and yet the days both sped and crawled. I became acutely aware of the clock, abandoning a given video course well before the end of its running time in order to keep to my original eight-hours-per-day schedule. I felt my progress criticized by time. After all, I knew these subjects already, well enough to teach them. Why was I completing well below 50% of each course I viewed?

Still, I was learning. My note-taking was my best confirmation of this, providing the richest evidence that I was "connecting the dots." The video courses each sparked a renewed enthusiasm for the tools explored; I found myself wanting to investigate my self-created software exercises more fully, and used discipline to reluctantly return to the videos to continue learning. I was

both distracted student and diligent teacher, toggling between the two roles to inch forward in my agenda.

Had a video been taken of my learning-by-video, it would have shown a very restless student indeed. I moved from sitting to standing to squatting on the chair, to stretching, to leaning. My fidgeting "workspace" extended in a semi-circle around the computer screen where the video played. Between courses, I moved the laptop from my desk to my dining table to a nearby sofa and so on, physically moving almost non-stop within a three- or-four foot range from the screen. Had I been a student in one of my classes, I would have driven myself to distraction! It is important to note that I do not suffer from any attention disorders, and in fact am capable of working for extended periods of time without a lot of movement (despite knowing that it is not a good thing for my physical health). I regularly watch movies without the need to move to this degree. And so why the fidgeting? My best speculation, on reflection, is that the constant movement provided a vehicle for my rising energy as I got excited about concepts but was nonetheless "trapped" in the passive experience of watching, rather than doing. I could not express myself verbally and have a teacher or classmate answer, and so discourse provided no relief. My best option was to move as a way of maintaining a high level of concentration.

Another possible analogy comes from my early teen years, when it was common cultural practice to spend literally hours speaking to one friend or another on a telephone landline, firmly tethered to a wall. Those hours were spent in similar fidgeting — lying on the floor, legs

up on a wall, crouching, and pacing. Again, this was a period of concentrated focus on auditory-only information, while restrained in a limited space around the landline anchor point — not unlike the limited viewing range around my laptop.

Did I adjust my learning after I noticed I couldn't sit still? Yes, and no. What I did was position my laptop to ensure I had room to move. Did my restlessness prompt me to change my scaffolding tools? I made sure I had pen and paper to take notes, which channelled my physical energy. As an artist, I had many coloured pens and other writing or drawing instruments and surfaces nearby, but instead I stuck with lined foolscap paper and a blue or black pen. Why? Because I was conscious of the time, and of the workplace context of my efforts, even though they took place in my own home. It seemed important to impose a workplace-like discipline on my studies to keep me on task. Was this a leftover from my own school years? Yes, but I allowed myself the room to move around, which I would not have done (or been allowed to do) in the physical classrooms where I learned as a child and young adult.

Nor did I fidget when I worked on online courses — in this same space and home — when I completed my M.Ed. At those times, I was engaged in such concentrated mental and keyboard activity that I had to maintain a seated position in order to work. Interestingly, in both my childhood classrooms and in the online M.Ed. environment, I was aware of real others sharing the experience with me. It was the presence of real-time others that settled me, perhaps for social and cultural

reasons. Was this new fidgeting an adaptation that was part of my learning journey? Definitely. I learned I could use movement as a self-regulating strategy to encourage persistence. I moved globally to stay on task.

Other tactics I had used to scaffold my learning — note-taking, reading along with the video, and practising with the related software during viewing breaks — were deliberate (although not planned in my initial agenda). This other perpetual movement was involuntary. I would have felt quite foolish had I been in a crowd. Perhaps the isolation of working in my otherwise empty home gave me "permission" to use this particular scaffold.

This video-based PD experience created overlapping paradigms of learning, using several forms of learning in action:

- **Experiential Learning:** LinkedIn Learning allows workplace-simulation using industry-specific software.
- **Adult Learning**: I felt the urgency of immediate use for teaching my related courses.
- **Self-directed Learning**: LinkedIn Learning provides a robust library of PD options.
- **Cognitive Apprenticeship**: I was aware that I took on the role of apprentice to someone who had mastered a skill they were sharing via video, asynchronously.
- **Situated Learning**: My workplace laptop and the software loaded within it formed part of the learning context, which was portable to my personal living environment; nonetheless, that laptop-based "internal" software world provided its own distinct

physical environment. I moved from the LinkedIn Learning video course to the software-specific context, all while inhabiting the safe and flexible home environment, thereby experiencing three worlds at once.

- **Cognitive Information Processing**: A challenge in this form of PD for me was processing the information received via video, translating that to handwritten notes (a familiar learning strategy that has worked well, historically, for me), attempting the skills physically in the software space, and then returning to consume more video-based learning.
- **Multiple Intelligences**: Despite some skepticism about the validity of this learning construct (Jensen, 2000), I had the sense that my learning process required the use of two forms of intelligence, specifically:

  - Bodily-kinesthetic intelligence, or the capacity to solve problems through mastering my hand-eye coordination and moving globally; paradoxically, while kinesthetic intelligence has been correlated with an inability to focus (Sener & Çokçalıskan, 2018, p. 126, par. 3, item 3), my sense was that movement was a *result* of my need to focus; and
  - Intrapersonal intelligence, or the capacity to understand myself and my learning needs.

Conclusions

As I look over my notes many months later, I speculate that I have retained approximately 90% of what I learned. Ultimately, the combination of video course viewing, handwritten note-taking, active trial and exploration of the related software, and subsequent review of my handwritten notes periodically in the weeks and months afterward were successful in increasing my knowledge about a wide range of technology-based subjects in a very compressed period of four days. However, video course completion rates were low, and three courses were never explored at all. Despite the benefits and significant learning that resulted from this PD, I left the process somewhat shocked and embarrassed by my performance.

My first research question was: Would time with LinkedIn Learning video courses be recognized by my college as credible PD? My request was received and approved without question or concern, implying that my college did indeed find video course viewing to be credible PD. One surprise for me was that I packed every requested PD moment with video-viewing time, and therefore did not allow for or acknowledge the practice or reflection time I knew as an educator would be required for me to learn and retain the material. What this approach reveals is doubt on my part that video viewing would be credible PD. I stacked up the viewing time because I felt that doing less would be, or would be seen as, insufficient effort. That is a humbling realization. I could choose any number of

adjectives to describe my mindset at the outset of this PD: arrogant, superior (to my student learners), timid, naïve, apologetic. Regardless of the nuance in why I chose not to recognize my own need for learning scaffolds, the truth is that I failed to build in learning time and instead put the full burden of my professional development over those four days wholly on the passive exercise of video viewing. In practice, video viewing was not enough.

A second research question was: To what degree could LinkedIn Learning support my professional development in design, project management, and digital marketing management within a compressed timeframe? The answer to this is more complex. I completed 27% to 58% of five (out of eight) LinkedIn Learning courses, totaling 32 hours, 48 minutes combined, in a PD working period of four 8-hour working days, or 32 hours. My feeling is that I retained approximately 90% of what I learned, noting that those retention rates are based on a subsequent review (and reflection) some six months later of the handwritten notes taken during the video learning. To summarize in numbers the degree of support for PD in design, project management, and digital marketing management, I estimate:

- 32 hours of PD time completed;
- 31 hours, 18 minutes of video viewing planned for those 32 hours (97.8% of full PD time) became a combined 32 hours, 48 minutes of video running time (or 102.5% of my full PD time) when I spontaneously added a course on Day Two;
- 21% of total video running time was actually viewed

(6 hours, 48 minutes);
- 21% of my PD time was therefore spent watching videos and fidgeting; the remaining 25 hours, 12 minutes (79% of my PD time) was spent taking notes and practicing software tasks;
- 16 pages of hand-written notes produced, or one page for every 25 minutes of video viewing time;
- Estimated 90% retention rate via review of notes.

Metrics

Table 4.1, Quantifying viewing time and completion rates

Day	Course	# Modules	% Completed	# Pages of notes	Daily total of notes	Hours per course	% of courses viewed
1	Online Marketing	12	58	5	5	3h48	58%
	Photoshop	15	0	0		4h41	
2	WordPress	14	0	0	2	5h27	22%
	GDPR	3	33	1		0h50	
	Project Management	11	27	1		3h20	
3	In design	13	31	3	3	6h30	31%
4	Google Ad Words	10	40	6	6	3h28	40%
	Illustrator	15	0	0		4h44	
4 days	8 courses	93 total modules	24% of modules actually completed	16 pages completed	4 note pages per day on average	32.8 total course hours	21% of courses actually viewed

- I accomplished 24% of my original goal.
- 21% of PD time was devoted to video viewing.
- 79% of PD time was devoted to note-taking and

hands-on practice.
- Although I have no metric to validate my estimate, I believe note-taking time was pivotal in supporting retention over time.

Organizing the data for comparison illustrates how poor my completion rates were: 19 of 93 modules were completed (or 24%), with only 21% of course running time viewed. Interestingly, on Days One to Three, I produced roughly one page of notes for every 10% of course viewing time; on Day Four, I created one-and-a-half pages per 10% viewed.Lessons Learned

- LinkedIn Learning is a valid and productive form of self-directed professional development learning; in my case, scaffolding in the form of note-taking and hands-on practice was required.
- Request an additional four to five times the video course hours for PD time. In other words, a three-hour LinkedIn Learning course may require between 12 to 15 hours to complete as PD.
- Reflect a similar addition of exploration hours when assigning LinkedIn Learning training to students.
- Focusing on one area of development (for example, InDesign) per PD period, versus exploring several varied topics, could increase completion rates within a compressed timeframe.
- Using multiple electronic devices (one screen for video viewing and another for practice work) could shorten the overall time requirements by stacking tasks within the same timeframe, although multi-tasking effectively may be a challenge.

Overview of LinkedIn Learning Videos

- Online Marketing Foundations with Brad Batesole (3 hours, 48 minutes)
- Photoshop CC 2018 Essential Training: The Basics with Julieanne Kost (4 hours, 41 minutes)
- WordPress Essential Training with Morten Rand-Hendriksen (5 hours, 27 minutes)
- Project Management Foundations with Bonnie Biafore (3 hours, 20 minutes)
- InDesign CC 2018 Essential Training with David Blatner (6 hours, 30 minutes)
- Google AdWords Essential Training with Brad Batesole (now retired) (3 hours, 28 minutes)
- Illustrator CC 2018 Essential Training with Tony Harmer (4 hours, 44 minutes)
- GDPR for Marketers with David Booth (50 minutes 22 seconds)

List of LinkedIn Learning Videos

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5. Exemplary Practices for Integrating LinkedIn Learning Video Assets in Online Post-Secondary Courses

AMANDA BAKER ROBINSON

Abstract

Based on several semesters of informal experimentation with learning design and observation of real student outcomes, this case study suggests and discusses strategies for leveraging LinkedIn Learning video assets in online post-secondary courses, in order to align with exemplary practices of instructional design and pedagogy. After a survey of relevant pedagogical considerations and instructional design principles, this report advises instructors and instructional designers to deploy a three-phase approach when adding a LinkedIn

Learning video to a lesson delivered via a learning management system (LMS).

First, the preparation phase is used to set the stage for learning in a manner that empowers adult learners to approach the video in the ways that they prefer to learn, while having the utilitarian function of helping students use the necessary software and tools effectively. Second, the integration phase simply deals with the effective placement of the video, along with any alternative forms of instruction, in the LMS learning module. Finally, the consolidation phase discusses strategies for making connections between video content and course concepts or real-world practice through self-assessment and application exercises. The importance of motivating students to complete the consolidation tasks is also highlighted.

One case study — the integration of two LinkedIn Learning software tutorial videos in Humber College's BICC 112 – Effective Business Writing course — is used to illustrate the recommended practices when implementing LinkedIn Learning videos. However, the recommendations made in this report are applicable to any traditional LMS-based, post-secondary teaching and learning environment. These recommendations allow instructors to include videos as a purposeful, well-integrated aspect of the lesson, rather than as outsourced instruction with little to no integration in the LMS materials. Students' learning experiences are more fruitful when well-designed preparation and consolidation techniques frame the pedagogically sound, video-based lessons provided by LinkedIn Learning .

Introduction

Based on several semesters of informal experimentation and observation of real student outcomes, this case study suggests and discusses strategies for leveraging LinkedIn Learning video assets in online courses, in order to align with exemplary practices of instructional design and pedagogy. One case study — the integration of two software tutorial videos in Humber College's BICC 112 – Effective Business Writing course — illustrates the recommended exemplary practices when implementing LinkedIn Learning videos.

Background

Online learning has many well-documented limitations, including the lack of a personal relationship with an instructor, lack of class discussion, and lack of experiential

learning. Another reality of online learning is that students with spatial, kinesthetic, and interpersonal intelligences are often at a disadvantage. Finally, learning in an online environment can often be one-size-fits-all, offering few, if any, opportunities for customized learning experiences. As an instructional designer and an instructor at Humber and Canadore Colleges, my goal is to look for ways to compensate for these shortfalls while capitalizing on the flexibility that online learning offers.

Since I hold the dual, and complementary, roles of online instructor of business writing and instructional designer, I have the unique fortune of being able to experiment with new instructional design approaches in my own courses, and then to witness the outcomes firsthand. Business writing can be a dry and unengaging subject, which leads to lower student attention levels, and therefore lower comprehension of, and retention of, key course concepts like writing emails and memos, report-writing, grammar, using Microsoft Word 2016 tools, and more. I have sometimes used my own business writing courses as testing grounds when trying out new tools and approaches if those resources are appropriate for the subject matter. Based on this history of experimentation, I have consistently found that business writing courses that include pedagogically sound video instruction in the teaching of key writing concepts tend to achieve better learning outcomes compared with courses that do not implement video-based instruction. In my personal experience, students consistently report higher engagement with, and higher comprehension levels of, course content when video assets are present.

Based on this informed assumption that video assets do improve outcomes for online learners, I have focused my attention in this case study on recommending ways to deploy LinkedIn Learning video assets within a learning management system (LMS) in order to maximize pedagogical advantages. Humber College has graciously permitted me to share screenshots and content from the BICC 112 – Effective Business Writing online course to support my case study and act as resources for readers. Although I am speaking about my experience teaching business writing at Humber College specifically, and presenting this case study based on these courses, the recommendations made in this report are applicable to any curated, LMS-based online learning experience that deploys videos for the purposes of instructing adult learners.

Pedagogical Considerations

Online learning has many well-documented pedagogical limitations — namely, students with spatial, kinesthetic, and interpersonal intelligences are often at a disadvantage in an e-learning environment. How do instructional designers and instructors compensate for these persistent inequities? Other pedagogical hurdles include how to construct meaningful interpersonal interactions between instructors and students, and from student to student, and how to provide customized learning experiences for a diverse array of learners. Such key pedagogical goals can be achieved — or are more

likely to be achieved — with careful instructional design and appropriate implementation of that design. LinkedIn Learning video assets provide an opportunity to leverage several key pedagogies, discussed in turn below, and thereby combat the shortcomings of the online learning environment.

Cognitive Apprenticeship and Situated Learning

Situated learning conceptualizes learning as taking place within a specific context, embedded within a particular social and physical environment. In a traditional post-secondary course, that context is typically a school's learning management system (LMS), but an LMS can be an abstract, impersonal space. Students are more likely to engage in lessons that have a more personal or practical context, which is why instructional designers often integrate simulations in learning design.

On a related note, cognitive apprenticeship emphasizes the importance of the process in which a master of a skill teaches that skill to an apprentice, thereby creating an interpersonal context for modelling concepts and skills, and achieving situated learning. In *Rethinking education in the age of technology*, Collins and Halverson (2009) argue:

> The pedagogy of the lifelong-learning era is evolving toward reliance on interaction. Sometimes this involves interacting with a rich

technological environment such as a computer tutor or a game on the web and sometimes with other people by means of a computer network. The pedagogy of computer tutors echoes the apprenticeship model in setting individualized tasks for learners and offering guidance and feedback as they work. (p. 91)

In a similar way to the computer tutor mentioned in this excerpt, featured narrators in LinkedIn Learning videos take on the role of proven master, a role for which they are exceptionally well qualified. As an example, in the Microsoft Word 2016 tutorial videos that are discussed in the case study later in this paper, content is delivered by David Rivers, a 20-year veteran software trainer. Rivers' professional focus is on encouraging corporate clients, including Microsoft itself, to integrate technology into their work processes in order to improve efficiency, so his forte is teaching laypeople to use software (Lynda.com, n.d.). As an unrefuted expert, Rivers is an ideal choice for guiding students through training on the Microsoft Word program. There is a clear pedagogical advantage when students can access the expertise of a knowledgeable master, making the case for choosing a LinkedIn Learning video, which uses a rigorous talent selection process, versus braving the sometimes-dubious origins of many open-source videos, or even recruiting a less experienced instructor.

Meanwhile, student viewers become "virtual apprentices" — a stark contrast to reading a text-based lesson, or passively watching a video with no anchoring teacher-figure. Students do perceive a key shift in their own

positionality to what is being taught when their learning is situated as a form of cognitive apprenticeship. During a past class, a student compared a Microsoft Word 2016 software tutorial video to "job shadowing," as if he were watching over the shoulder of a trainer.

It is important to note here that the full benefits of cognitive apprenticeship cannot be leveraged by LinkedIn Learning because videos only communicate one way, from broadcaster to viewer; therefore, there is no teacher responsiveness to individual learners in the form of coaching and scaffolding. However, LinkedIn Learning videos are effective in achieving a one-way sense of cognitive apprenticeship by building students' sense of trust in the speaker's expertise. The missing master-to-apprentice communication should be provided in the instructional language that surrounds a video asset and in lesson activities.

Active Reflection

A key aspect of learning is reflecting on the learning experience. In Humber College's online business writing classes, software tutorials for Microsoft Word 2016 are framed with written instructions that instruct students to open their own software and follow along with the video. Although the videos themselves do not foster reflection per se, instructional design strategies can position a video as a step-by-step guide and thereby act as a form of active reflection — reviewing by doing. This type of direction may increase engagement and comprehension of

concepts, especially when paired with a post-assessment that allows students to reflect on what they have learned.

Multiple Intelligences

Gardner (1983) famously asserted that individual students have unique intelligences. Linguistic intelligence is well served by text-based lesson delivery, but students with, for instance, (a) visual-spatial, (b) bodily-kinesthetic, or (c) interpersonal intelligences are not typically well served by online learning platforms. LinkedIn Learning videos have the potential to engage these underserved students by (a) presenting concepts spatially on the screen, (b) allowing students a chance to physically follow along with a modelled skill, and (c) adding a teacher-figure as the speaker and demonstrator in the video.

Self-Directed Learning

Self-directed learning is a key requirement of online learning. Online courses give students an opportunity to develop and practise self-direction, thereby encouraging students' agency to decide where, when, and sometimes even how they will complete their lessons. Typically, adult learners value self-directed learning, since adults prefer to feel that they have choices and are learning voluntarily (Humber Centre for Teaching and Learning, n.d.). All LinkedIn Learning assets provide a helpful table of contents that allows students to navigate the video

content and choose to review particular segments, while the player allows students to adjust speed. Students benefit greatly from this built-in customizability, as they can tailor the presentation to their learning preferences.

By optimizing these pedagogical approaches in the online learning context, it is possible to improve the learning experience for a large number of students who do not typically thrive in online learning contexts. LinkedIn Learning videos provide a unique opportunity to achieve this significant goal.

Instructional Design Considerations

Along with pedagogical considerations, instructional design principles should also influence the planning of any digital learning experience. When approaching any digital experience, the three principles of Universal Design for Learning (UDL), as set forth by Meyer, Rose, & Gordon (2014), provide an important framework:

1. Multiple means of representation: giving learners various ways of acquiring information and knowledge
2. Multiple means of expression: providing learners with alternatives for demonstrating what they know
3. Multiple means of engagement: tapping into learners' interests, offering appropriate challenges, and increasing motivation

The discussion below will reference these UDL principles, where applicable, as a rationale for design recommendations when LinkedIn Learning videos are deployed in online learning.

Practical Strategies for Implementing Video Assets in Online Learning Environments: A Case Study

Before discussing exemplary practices for deploying LinkedIn Learning videos, it is important to start at the beginning: the Getting Started section of an online course, which may be labelled differently at different schools. This section is where the course syllabus, course outline, instructor contact information, and other start-up information reside on an LMS. In a course that effectively leverages LinkedIn Learning video assets, the start-up module should also include an orientation to the LinkedIn Learning interface and player. An orientation is particularly important to students who are not computer savvy, students with language barriers, and students with disabilities. Subtitles, play speed, the table of contents, transcripts, and the search bar are extremely important to these learners. It is essential that they be made aware of the tools at their disposal and how to use them, as these tools empower students to learn in the way that is best for them. Fortunately, LinkedIn Learning has already created just such a tutorial. The "How to Use LinkedIn Learning

" video is very helpful. Take the time to direct students to Part 2: Watching the Training for the most relevant information.

Avoid the expectation that students will optimize their viewing experience intuitively. Students who lack a high comfort level with technology are often too intimidated to attempt customization, while other students who are used to teacher-directed learning need to be taught how to customize their learning experiences when given the opportunity. Teaching learners how to use the LinkedIn Learning tools places more power in their hands, contextualizing the LinkedIn Learning videos as an *active* viewing experience rather than a *passive* viewing experience. In an interesting study that has clear implications for the implementation of videos in e-learning, Craddock, Martinovic, and Lawson (2011) found that when viewers of an object controlled their view via a touch screen, they recognized what they were looking at much more quickly than those who did not have control over what they saw. The bottom line here is that online teachers should foster active viewing, which has obvious implications for learning faster and better, specifically by leveraging the benefits of Self-Directed Study (see Pedagogical Considerations) and by providing more paths for content delivery (UDL Principle 1).

Case Study: Context

In Humber College's online business writing class BICC 112 – Effective Business Writing, students are encouraged to

download a free student version of Microsoft Word 2016, and all submissions must be in .docx format. Although some students persist in using alternative word-processing software, which is acceptable as long as they are sufficiently skilled in that software, the vast majority of students use Word. Given students' very diverse backgrounds, some have advanced knowledge of the software, while others struggle to understand the basics. Therefore, it is important to train students on Microsoft Word software so that all students feel confident as they complete course assignments.

Scheduling of the Word tutorial is key to maximizing impact. Students need to gain this information early enough for it to be helpful, but not so early that they forget what they have learned before they begin to apply the knowledge. In BICC 112, the Word tutorial appears in Module 1 in the very first week of class because the software is used throughout the course. Early introduction develops confidence and sets up the Word tutorials as reference points to be used throughout the course. Many students find this early introduction helpful.

Case Study: Application

When adding a video, such as the Word 2016 tutorial, to any online course, the worst possible approach is to place the link to the asset haphazardly, with no accompanying connective framework within the LMS. Instead, this report advocates ushering students through three learning phases when they encounter any video asset: (1)

preparation, (2) integration, and (3) consolidation. These three phases will be discussed at length and illustrated with reference to the online BICC 112 – Effective Business Writing course currently offered by Humber College.

To provide context for this discussion, Figure 5.1 offers a practical illustration of the sequence of the three phases within BICC 112. Students must always encounter the preparation prior to the video. In Figure 5.1, the preparation is the page entitled "Introduction to Word 2016" (provided in full text below in Table 5.1). Then, in the integration phase, the videos appear, along with any alternative or supplementary learning materials. In this case, students have the option to choose the video that is applicable to their own computer (Mac or PC), and they are provided with a link to Humber's text-based Microsoft Word 2016 training guide. Finally, in the consolidation phase, students are given confirmation materials — in this case, a self-check exercise (see Appendix A for full text) and its accompanying achievement badge.
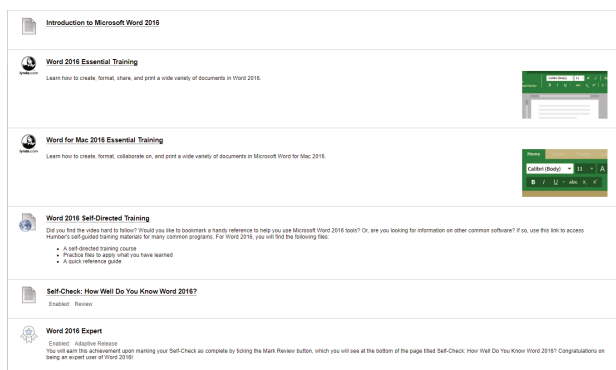
Figure 5.1, Preparation, integration, and consolidation phases for deploying video assets in the LMS for BICC 112 (Humber College, 2019)

Phase One: Preparation

When LinkedIn Learning videos are integrated into an LMS-based lesson, the LinkedIn Learning video links often self-populate with content when deployed in the LMS, displaying a brief summary of the video topic for students, a relevant image, and the LinkedIn Learning icon. Because this content is pre-set, there is no opportunity to customize the description in order to direct students' attention; therefore, the preparation phase is essential to direct students as they watch a video. Figure 5.1 shows the placement of the preparation page titled "Introduction to Microsoft Word 2016" prior to the LinkedIn Learning videos in the BICC 112 example.

The preparation phase that should appear prior to any video asset consists of several possible steps, listed and described in this section. Keep in mind that one or more of these elements may be omitted when it does not apply to a particular video-based learning experience.

> **Step one:** Assemble required equipment (UDL principle 1). It is important to note that students' equipment varies. As an example, in BICC 112, students must have access to software tutorials for both Macs and PCs, and they should be clearly directed to choose the correct one between:
>
> ◦ Word 2016 Essential Training
> ◦ Word for Mac 2016 Essential Training
>
> It is also important to direct students to download

any software they may need prior to watching the video, and assemble any tools that they might require, such as writing utensils and paper to make notes. This step is not always necessary if specific equipment is not required to explore the subject matter.

Step two: Orient students if necessary. Since, in BICC 112, the Word tutorial videos are the first LinkedIn Learning assets that students encounter, it is important to remind them to watch the "How to Use Lynda.com" orientation video that is posted under Getting Started so they familiarize themselves with the LinkedIn Learning tools. Be sure to emphasize the importance of this orientation for students who lack familiarity with computers, speak English as a second language, or have a documented disability. Once students have accessed LinkedIn Learning resources numerous times, this step can be omitted.

Step three: Explain the "why" (UDL principle 3). As Malcolm Knowles puts it, "If we know why we are learning, and if the reason fits our needs as we perceive them, we will learn quickly and deeply" (Knowles, n.d.). Indeed, it is well documented that adult learners thrive when they perceive subject matter to be personally relevant (Humber Centre for Teaching and Learning, n.d.). Therefore, any video assets should be introduced with a statement of how they will be useful to students throughout the course or in the real world, thereby positioning

students to *want* to learn what the videos have to offer.

Step four: Help students manage their time and prepare to learn. Avoid taking adult learners by surprise; always state the approximate length of a video when integrating it into a lesson, especially when they are quite long. In the case of BICC 112, both Word 2016 videos are over five hours long. Contemporary internet users are not necessarily accustomed to consuming lengthy videos on popular video-sharing platforms. In fact, according to statistics collected by a video production company, at the time of writing the average length of the 10 most popular YouTube videos was just 4 minutes, 20 seconds (MiniMatters, n.d.). Imagine students' reactions when they expect a short clip and are still sitting there five hours later. By preparing the students for the time commitment that is required, instructors and designers can enable learners to set aside adequate time, divert distractions, and mentally prepare to engage their attention for a longer span.

Step five: Honour what is known (UDL principles 1 and 2). When teaching adults, it is important to establish what they already know to help learners feel that their knowledge and experience is being extended rather than dismissed (Humber Centre for Teaching and Learning, n.d.). Fortunately, in BICC 112, the Word 2016 tutorials include a useful diagnostic that helps students identify their own level of expertise and flag topics that they may wish

to review, so it is a simple matter of directing the students' attention to this feature. If no diagnostic was present, an instructor could also link to a third-party Microsoft Office quiz, or write his or her own pre-assessment.

Step six: Create a sense of choice (UDL principle 1). Adults learn better when they feel that they are voluntary learners who can make choices between learning materials (Humber Centre for Teaching and Learning, n.d.). In the BICC 112 example, instructional language seeks to highlight free choice by explaining the different paths that students can choose to take while progressing through the video tutorial. This study has already discussed the value of active viewing versus passive viewing. When applied to LinkedIn Learning videos, it is important to prepare students to be active viewers by emphasizing their personal agency and making it clear that they have control over the delivery of the video content and how they choose to progress through this content.

Step seven: Activate a variety of learning styles (UDL principle 1). As posited by Gardner's theory of multiple intelligences (see Pedagogical Considerations), students learn in a variety of ways. From the instructional design perspective, it is important to implement the UDL principles when planning how to teach a lesson. Activate the power of learning styles by building in opportunities for different kinds of learning to take place. In BICC 112, the instructions encourage students to open Word

2016 and physically follow along with the steps in the video if they wish to do so. Students who are kinesthetic learners thrive when given these sorts of opportunities to learn by doing, while visual and auditory learners are more likely to forego following along in favour of absorbing the information with their full attention. Indicate any alternative learning avenues as well. For instance, BICC 112 students who are linguistic learners are provided with a text-based alternative to the videos in the form of a link to Humber College's comprehensive proprietary software training guides.

Step eight: Preview the consolidation. Prepare students for the post-video consolidation of learning by briefly mentioning what the students should do after they complete the video. This technique helps students to plan their learning and manage their time effectively. Furthermore, as any teacher can tell you, students also tend to pay closer attention when they know a quiz is coming.

Table 5.1 shows the text that constitutes the preparation phase for the Word 2016 tutorial in BICC 112. All eight recommendations discussed in this section are indicated in the functions column next to the text that leverages each respective function, so the pedagogical objectives of all text should be clear.

Table 5.1, Preparation for Word 2016 tutorial in BICC 112 (Humber College, 2019)

Introduction to Word 2016	
Text	**Functions**
Although this is not a computer science course, knowledge of word-processing features is extremely important to designing a visually striking and reader-friendly document. The next activity in this module is a 5+ hour-long video from LinkedIn Learning entitled Word 2016 Essential Training, which will walk you through many of the key word-processing tools that you will use in this course and beyond. This video is very lengthy so do not feel that you need to watch it all. Use the table of contents to the left of the screen to watch just the topics that you are not already familiar with.	Explain the "why"; Help students manage their time and prepare to learn; Honour what is known; Create a sense of choice
First, to learn more about how to use the table of contents, the LinkedIn Learning video player, and other helpful tools provided by LinkedIn Learning , please be sure to watch the How to Use Lynda.com orientation video, which is posted in Getting Started. You should watch Part 2: Watching the Training. If you are not computer savvy, you speak English as a second language, or you are registered with Accessible Learning Services, please do not skip this step, as you will learn about several tools that will help you view the video in the way that works best for you.	Orient students if necessary; Honour what is known; Create a sense of choice
Next, be sure to download the latest version of Microsoft Word. Humber students can download the Microsoft Word program for free, for both PC and Mac operating systems. If you don't already have this program installed on your computer, please download it now, so that you can follow along with the steps outlined in the training video, which is the next item in Module 1.	Assemble required equipment
Remember, Humber College provides Microsoft Office software free for any students! If you do not yet have Microsoft Word 2016, download your free software by clicking the button below [hyperlink is provided for students].	Assemble required equipment

Introduction to Word 2016	
Now it's almost time to watch the Microsoft Word 2016 training video. You'll note that the following two items in Module 1 are training videos. Do not watch both videos; choose the correct video for your computer type (PC or Mac), and watch only the video that applies to you [PC users (Windows/Microsoft) should watch Word 2016 Essential Training; Mac users should watch Word for Mac 2016 Essential Training.]	Assemble required equipment; Help students manage their time and prepare to learn.
If you use Word 2016 on a regular basis, you might feel quite confident with the software already, or you may have no idea what your level of expertise might be. If either of these descriptions apply to you, be sure to take the "What do you already know?" diagnostic quiz that appears after the Introduction to the video. This quiz will help you pinpoint the topics you most need to review, and you can use the table of contents to skip what you already know.	Honour what is known; Create a sense of choice
As you watch, it is highly recommended that you open up Word and try to follow along with the examples you see on screen whenever a skill that is new to you is introduced. Since it can be difficult to watch a video on your computer and use Word on the same device, it is ideal if you have a second device you can use. Or, if it helps you follow along better, just jot notes as you watch.	Activate learning styles; Create a sense of choice
When you are finished watching the video, complete the ungraded self-check exercise titled Self-Check: How Well Do You Know Word? Feel free to refer back to the video, and to the supplemental Word 2016 Self-Directed Training web link to help you complete the self-check. Now, let's watch and learn!	Preview the Consolidation

Phase Two: Integration

The integration phase is very often simply the placement of the video, or videos, within a learning module, but it can also include alternative delivery methods for similar content to accommodate different learning styles (UDL

principle 1). As already discussed, students in BICC 112 were offered a choice between two versions of the video: one for Mac users, and one for PC users. Students were also provided with a link to supplemental resources that contained the same information as the videos, but in a visual, text-based format, to provide an alternative learning method for linguistic learners. Figure 5.1 shows the placement of these items: the two videos followed by "Word 2016 Self-Directed Training," which links to Humber College's comprehensive software training guides.

Phase Three: Consolidation

After viewing the videos, students need to consolidate what they have learned. The word *consolidation* is used very intentionally here because this phase must accomplish two tasks that are both present in the dictionary definition of the word: (1) to make firm or solid any new learning so that it enters long-term memory, and (2) to unite two things (in this case, the video lesson must be connected with course concepts and real-world practice). An effective method for consolidating learning is to offer a post-assessment that will allow students to self-check their understanding. This post-assessment can take a variety of forms: a class discussion on the LMS discussion board, a quiz, or an exercise, to name a few (UDL principle 2). Regardless of what task is set, the substance of that task must be aimed at the *consolidation* of what was learned in the video.

In BICC 112, the post-assessment after the Word 2016

tutorial focused on real-world practice since the intent of this tutorial video was to enable practical application of skills that could be leveraged in future course assignments. Therefore, the post-assessment in this example was an exercise asking students to complete a series of tasks on a Word 2016 document in order to confirm their understanding of the video topics. This exercise is provided as a resource for instructors in Appendix A.

Of course, this assessment can be graded, but for those situations where the assessment is not graded, it is a great idea to attach some sort of achievement or commemoration to mark students' progress. In BICC 112, students are awarded with an achievement badge when they mark the Self-Check exercise as complete (see Figure 5.1). Achievement badges can bring a sense of accomplishment and provide an incentive for students to engage with the post-assessment (UDL principle 3). Tasks with achievements attached tend to see a higher rate of completion, which results in more students learning.

Limitations and Challenges

Of course, as with any form of teaching and learning, there are limitations and challenges to this recommended three-phase approach to deploying LinkedIn Learning video assets in online learning environments.

First, this study only considers the problem of integrating

LinkedIn Learning videos in a post-secondary, LMS-based online course. Traditional post-secondary learning is mostly *push learning*, which means that students progress through a curated course of learning, typically at a pre-set pace. The alternative, *pull learning*, is learner-initiated, often resembling just-in-time (JIT) style delivery, with short and precise microlessons accessed at the exact moment they are needed. This kind of learning is a major trend in corporate e-learning, so it is important to specify that the recommendations made in this report are developed with a curated course model in mind. They would require significant revision to be applicable for pull learning.

Second, it is always important to keep human factors in mind when discussing any human-used system. Learners are not perfect and so their learning will not be perfect, regardless of how extensively content delivery is optimized. As an example, in online learning, students who struggle to use technology often lack the ability to deep-dive into interface customization and learning tools, despite orientation and training. Meanwhile, students who come from an environment where learning is teacher-directed can feel overwhelmed and paralyzed when given too much choice in learning paths. Learning how to learn — particularly, scaffolding one's own learning in an online context — is an important process for adult learners, and many will still be navigating this key life lesson as they encounter online materials. An online instructor should always strive to act as a resource to assist adult learners in building confidence with technology and developing their personal learning skills

so they get the most out of any optimized e-learning design. An online instructor should also be forgiving when students struggle to master the demands of effective e-learning.

The recommendations springing from this single case study, particularly to do with writing the preparation and consolidation pages that should bracket pedagogically sound videos, are not exhaustive. Online instructors who would like to learn more about exemplary practices for using LinkedIn Learning to achieve the best possible outcomes in online teaching and learning can use the "Teaching with Lynda.com" video provided by LinkedIn Learning as a helpful resource.

Conclusions

By offering comprehensive and effective preparation and consolidation, placed pre- and post-video, instructors can maximize the pedagogical and design impact of video assets in an online course. Appendix B provides interested instructors with a helpful checklist for implementing the three-step design for integrating LinkedIn Learning videos in these phases: (1) the preparation phase, (2) the integration of video asset(s) and any alternative learning formats, and (3) the consolidation phase.

These recommendations will allow an instructor or course designer to include videos as a purposeful, well-integrated aspect of a lesson, rather than as outsourced instruction with little to no integration in the LMS

materials. Students' learning experiences are more fruitful when well-designed preparation and consolidation techniques surround the engaging and pedagogically sound instructional videos provided by LinkedIn Learning.

Appendix A: Consolidation Exercise

Self-Check: How Well Do You Know Word 2016?

By completing this self-check, you will ensure that you understand the major concepts you learned in the Word 2016 training videos. Refer back to the videos as needed to complete these tasks. Remember, you can use the LinkedIn Learning table of contents to navigate through the videos to the relevant topic.

For the Module 1 discussion, you will be asked to write an introduction that will present you to the class. Write a one-paragraph draft of this introduction (or paste it here if it is already complete) immediately below the self-check instructions. Then, follow the instructions below, in order:

1. Add a title for your paragraph, which should be on its own line, centre-aligned, and bolded.
2. Change the font of your introduction

accordingly:

- ◦ Adjust the colour to a shade of your choice.
- ◦ Change the font style to a font of your choice.
- ◦ Add a text effect to the title.

3. Add a page break between this instruction page and your introduction so that your introduction is on page two of this document.
4. Add (a) a border and (b) shading for your introduction.
5. Adjust the line spacing for your introduction so that it is double-spaced.
6. Adjust the page margins to *narrow*.
7. Add a watermark to the page.
8. Add a list (either numbered or bulleted) to your paragraph.
9. Add a small photograph of yourself to your page. Can you add a special effect to this photo?
10. Run Spell Check.
11. Use Track Changes to make three revisions to your paragraph.

Once you have completed these eleven steps, congratulate yourself on mastering Word 2016! Be sure to set this task as *Reviewed* to earn an achievement badge for your hard work.

Data Source: Humber College, 2019

Appendix B: Checklist for Integrating Video Assets in the Post-Secondary LMS

Phase One: Preparation

◊ Indicate required equipment or software, if necessary.

◊ Orient students to LinkedIn Learning , if necessary.

◊ Explain the reasons for watching the video, with connections to course content and real-w

◊ Indicate required equipment or software, if necessary.

◊ Orient students to LinkedIn Learning , if necessary.

◊ Explain the reasons for watching the video, with connections to course content and real-world practice.

◊ Help students manage their time and prepare to learn, by describing the length and delivery style of the video. Here are some sample questions to consider:

  ◦ Should students try to follow along with a tutorial?
  ◦ Should students take notes?
  ◦ How much time is needed to watch the

video?

◊ Honour what is known: provide a diagnostic for students or a way to self-direct their learning path to the topics that are new, or require review.

◊ Create a sense of choice and foster active viewing.

◊ Activate learning styles by building in opportunities for different kinds of learning to take place.

◊ Preview the consolidation by briefly mentioning what the students should do after they complete the video.

◊ **Phase Two: Integration**

◊ Place video(s).

◊ Provide any supplemental or alternate links for different learning styles and abilities.

◊ **Phase Three: Consolidation**

◊ Provide a post-assessment that will allow students to self-check their understanding, connecting the video with broader course concepts or with real-world practice.

◊ Provide motivation and indicate completion: add a grade, a check mark, or an achievement marker.

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6. Maximizing Employee Development by Using LinkedIn Learning

BRANDON CARSON AND ASHLEY MARSHALL

Abstract

The focus of this research is to amplify the usefulness of LinkedIn Learning as an available resource for the professional development of students and employees in the Ontario post-secondary sector. In the professional experience of the lead investigator, he has facilitated the professional development of work-study students and part-time employees by curating specific content on LinkedIn Learning when a gap in their knowledge or skill set has been identified as a potential challenge to their ability to complete a project. Such instances of just-in-time learning have proven to be the most efficient and current option for problem solving and the expedition of challenges. More than a pedagogical tool, our use of LinkedIn Learning highlights exemplary practices for

managers responsible for the onboarding and career advancement of staff members. By providing a blanket license to LinkedIn Learning for all post-secondary students and employees, the Ontario government has promoted a culture of lifelong learning and helped provide curriculum and training resources in fields that are constantly evolving.

Key Words

LinkedIn Learning, employee development, lifelong learning, onboarding, just-in-time learning, professional development, career advancement, technology adoption, web design, web development, WordPress, project management, andragogy, non-direct entrant

Introduction

This chapter seeks to examine the use of LinkedIn Learning for the professional development purposes of employees in the Ontario college sector. The purpose of this autoethnography and case study is to explore the use and perception of LinkedIn Learning for professional development purposes. It was expected that the data generated from this inquiry would inform new understandings and exemplary practices for future LinkedIn Learning promotion and use within the Ontario

post-secondary sector. The lead investigator describes observations from past part-time and work-study employees and compiled survey data from three work-study students who currently work in web development related positions .

Background

According to Statistics Canada (2017), in 2017, 5.6% of employed people had more than one job...Of all workers with multiple jobs, 10.3% [had their main job] in educational services." Given the continuing climate of precarious employment, there is a need to analyze and strategize best business practices to train and retain employees. Cultivating a culture of lifelong learning and enhancing the learning experience of employees is a key component to buttressing Ontario's labour economy. By prioritizing the question "What benefits does the use of LinkedIn Learning provide for employee development in technology-related positions?" this report offers primary research to support the advancement of LinkedIn Learning as a prime resource for managers in digital industries and beyond. Specifically, the range of audiences who find LinkedIn Learning beneficial is wide: participants in this study who self-identify as "hands-on learners" and are typically "not fans" of online learning reported that LinkedIn Learning is useful for its engaging content, while employees who are more geared toward learning online or asynchronously explain that LinkedIn Learning saves them "time and money." Accordingly, the

scope of this analysis broadens the notion of universal designs for learning to include the experiences of those who are learning while also working, as well as those who are teaching while also working in other fields. For employees, managers, teachers, and students alike, LinkedIn Learning is a resource that supports learning and upskilling in a wide array of economic contexts. This finding is additionally beneficial as researchers draw the conclusion that LinkedIn Learning is a resource that can be further optimized by pairing it with LinkedIn to continue advancing users' professional networks and skills, which employers have the opportunity to endorse. Especially in a Business Communications setting, resources such as LinkedIn Learning and LinkedIn are twin forces for preparing students and prospective employees for success upon graduation, upskilling for second careers, and marketing their additional credentials and interests.

Additionally, primary data offered in this report suggest student/employee satisfaction with LinkedIn Learning in their professional development. Participants in this study make a case for why LinkedIn Learning , as a method of up to date and ad hoc retooling, is proven to be constructive to their experiences as lifelong learners who recognize Ontario's competitive employment economy. Having access to and existing in a culture/department that encourages their professional development is a desirable asset with a measurable return on investment (ROI).

Pedagogical Reflections

Emerging trends in higher learning suggest that there is an increasing number of "non-direct entrants." In the Access and Equity section of Durham College's *2017–20 Strategic Mandate Agreement*, it is stated that Durham College's student population is comprised of "non-direct entrants, including a growing trend of university graduates entering DC following their university degree" (Durham College, 2017). Accordingly, there is an increased need to focus on pedagogy as holistically as possible, including andragogy (the method and practice of teaching adult learners; adult education) (Oxford English Dictionary). In such an educational climate, it becomes increasingly important to consider and develop strategies focused on best leveraging and developing skills for adult learners. Included in this cohort are employees in technology-related positions. Henry Giroux, a leading pedagogical critic, states that "First, in what way do we have to learn how to engage digital technology, so that it is not constantly engaged in a kind of endless erasure of informed judgement that is no longer present in the most immediate of moments?...Digital technologies carry the inherent promise of reclaiming public memory. They develop archives, they offer huge amounts of knowledge, and they control access" (Jandrić, 2015).

Resources such as LinkedIn Learning are necessary tools in response to our educational and economic environments that see students who are also employees. Creating and nurturing opportunities for open access

allows for supervisors to adopt management styles such as directive, participative, or coaching. Under such conditions, the hypothesis is that employees (who are likely also adult students) will experience increased autonomy, and therefore confidence, yielding better performance in their vocations. As outlined in future sections, participants expressed their interest in lifelong learning due to the helpfulness and their ability to access open, asynchronous resources such as LinkedIn Learning. The future of andragogy is deeply rooted in learners' opportunities to build on their skills, which is cultivated by a democratized educational environment.

Observations of Past Employee Development

Throughout the principal investigator's time at Durham College, he has led the onboarding of several part-time employees in technical roles that required a web development skill set. The employees were required to perform front-end and back-end coding and use the WordPress content management system to update content and develop customized websites that met the user requirements of a variety of institutional stakeholders. As new employees have joined at multiple times throughout the year, onboarding became resource-intensive for the author. A new solution was needed to provide introductory training in WordPress and back-end programming languages with which employees lacked experience. The initial training model consisted of

individual or small group training, ranging from 10 to 14 hours in length. This training would occur multiple times throughout the academic year and take the author away from his regular workload. Through the use of LinkedIn Learning, the author has been able to decrease training hours to two to three hours of in-person training and 10 to 15 hours of training using LinkedIn Learning. This method has allowed the new employees to receive fundamental training from industry experts, along with coding exercises and pathways to continue their learning in more advanced topics. Upon completion of the fundamental training, student-employees are able to receive individualized training on specific customizations to the WordPress multisite platform at Durham College to ensure their success. This new approach has reduced face-to-face training time, improved department efficiencies, increased productivity, and promoted the importance of lifelong and self-directed learning to new employees.

Student Experiences

The following section presents the findings of the qualitative data analysis from student feedback on the use of LinkedIn Learning for professional development and lifelong learning purposes. The responses are aggregated into subsections, and significant statements by participants are included to illustrate the findings.

Staying Up to Date in the Field of Web Development with LinkedIn Learning

All participants viewed LinkedIn Learning as an excellent tool for staying up to date with programming and markup languages, as well as content management systems such as WordPress. The participants used LinkedIn Learning to refresh knowledge they acquired from previous courses and to learn new tools and languages that they would leverage in their roles as part-time employees through the guidance of their supervisor. LinkedIn Learning not only helped employees learn new concepts, it also allowed them to build on existing knowledge and become more well-rounded web developers. In the large library hosted on LinkedIn Learning, features such as release date, course feedback, and level of expertise helped students browse through the library and find the suitable videos and courses to match each employee's needs. The participants noted that web development is a difficult field in which to find up to date content because of how quickly information can become inaccurate due to technological changes. LinkedIn Learning's library resources for website design and development included the latest changes in programming languages and the most up to date major releases of content management systems.

Participant Responses

Response 1: "The main issue with traditional in-class learning for me, personally, has been the inability to know exactly what the professor said during the lecture. When learning WordPress specifically, there is a sequence of steps needed to get started or complete an installation. So if you miss a step, you're in trouble. With LinkedIn Learning, it's easy to rewind a couple seconds, verify if you did the step correct, and go on your way."

Response 2: "Seeing that LinkedIn Learning has a library of courses that is constantly growing, I find myself always adding to my playlist. Their courses always keep me engaged and wanting to learn more. With every course, I am learning and downloading new materials in order to grow as a developer. Even if I don't end up using them in the future, I will always be knowledgeable in the matter."

Response 3: "LinkedIn Learning provides a couple of ways to make sure you are learning up to date information.

"Every course has a 'Released: MM/DD/YYYY' tag on the overview tab. This gives the student a clear indication to whether the course is up to date or not.

"In addition to the released tag, every student has the ability to give course feedback to the professor. With this tool, students can send a message to the course professor to let them know the course is out of date.

The professor can then take the steps needed to update their course."

Response 4: "Having previous experience with the WordPress platform, I was able to refresh and grow my knowledge. Since the platform is forever evolving, LinkedIn Learning provided me with the most recent tech videos. I was able to gain new strategies on how to organize my project all while getting the most out of the platform. To my surprise, LinkedIn Learning integrated skills I was seeking (example: learning how to use Gulp) into the WordPress platform. My biggest takeaway is that LinkedIn Learning not only helped me learn a new skill but now allows me to build on that skill."

Quantity and Quality of Educational Resources Listed on LinkedIn Learning

The participants found LinkedIn Learning to be a robust library consisting of a significant quantity of educational resources superior in quality to what they previously experienced in an online setting. From a quality standpoint, one participant discussed the benefits of formative exercises to test their coding knowledge and appreciated the transcript option to match their learning preference. Considering how quickly information in the web development field can become out of date, the participants also found that the up to date videos allowed

them to feel ready to use the latest version of WordPress and apply their new-found skill set in industry through freelance work or other employment opportunities.

Participant Responses

Response 5: "The quality of the educational resources listed on LinkedIn Learning were excellent, you always find what you need without struggling to find it."

Response 6: "The quality of courses surpassed my expectations. I like how LinkedIn Learning provides all the exercise files, the ability to view offline, and a transcript that I find myself reading through more often than not. It accommodates all types of learners. Sometimes I find myself trying an exercise before starting the video. I want to see if I can try it on my own first, and later see where I fall short."

Response 7: "I had the same professor for all of the many courses I completed, and he was exceptional. The professor took it slow with the learning process, but not too slow. All of the information was up to date (very important for programming work), so there was virtually no errors or roadblocks while learning the course. He went into detail on several important lectures. He clearly had a deep understanding of the matter at hand."

Usefulness of LinkedIn Learning in Preparing Students for Future Courses in Their Program

The participants felt prepared for future courses, gaining introductory and intermediate knowledge of the WordPress content management system and the PHP programming language from their roles in the Teaching and Learning Centre and use of LinkedIn Learning as part of their onboarding process. The participants had not previously completed courses in their program on WordPress or PHP. After completing the LinkedIn Learning courses, they felt they had a step up on their peers when the classes began.

Participant Responses

Response 8: "In my opinion, the most difficult aspect of the programming industry is trying to stay up to date with the ever-changing languages, libraries, and frameworks. With LinkedIn Learning, I had the ability to find a future course outline, look at the different languages/libraries/frameworks we were working with, and start learning immediately. When it came time to actually take the course, I was ready to achieve a deep understanding of whatever we were working with."

Response 9: "Having a CMS course dedicated to

WordPress, I found myself very well prepared. Not only was I able to grasp the material much faster, but able to challenge myself and ask more insightful questions in class. For example, I've challenged myself to incorporate Gulp into my personal WordPress website. Since we weren't covering it in class, LinkedIn Learning has given me a great base knowledge and I am now able to ask my instructor for additional help if needed."

Leveraging LinkedIn Learning as a Lifelong Learning Resource

All participants viewed LinkedIn Learning as a valuable lifelong learning resource and plan to continue to use the tool after graduation by purchasing a subscription or leveraging access via their local public library. The participants viewed LinkedIn Learning as a required resource for staying current in the field of web development, a field that constantly changes with new programming languages and adaptations to current languages. One participant stated that through LinkedIn Learning they were able to continue learning more about a specific topic that their course did not cover, helping them become a more advanced user and expanding their skill set for future employment opportunities.

Participant Responses

Response 10: "You must be a lifelong learner if you want to stay in the programming industry. As of now, a junior developer, I do not have a deep enough understanding to teach myself everything. LinkedIn Learning gives me the ability to learn every single day without enrolling in a post-secondary institution. This saves me time and money."

Response 11: "Being a hands-on learner, I've always wanted to be in a classroom where I can ask questions and test what I'm learning instantly. I was never a fan of online learning, finding it boring and repetitive. Having all the resources LinkedIn Learning provides, I am always engaged and learning at a faster pace. Being able to learn from anywhere, at any time, and with any instructor, I found myself engaging more with online tutorials and surpassing my learning expectations."

Response 12: "Education is an investment. LinkedIn Learning is extremely cheap compared to traditional post-secondary education. If I can learn a new framework/library on LinkedIn Learning to get a promotion, the subscription is paying for itself 10 times over."

Since using LinkedIn Learning , each learner has a new and positive perspective of lifelong learning. Participants discussed the advantages of using a tool like LinkedIn

Learning to refresh their skills after not using a specific coding language for a period of time. They also acknowledged the benefits that LinkedIn Learning brings to taking control of their learning journey.

Opportunities for Expansion

As mentioned earlier, the professor of communications, with expertise in teaching Business Communications, suggested that LinkedIn Learning be utilized alongside LinkedIn to support students who are entering into a competitive employment economy. By using LinkedIn Learning to upskill, and by learning how to market those skills via LinkedIn, professors are able to supervise students who are developing their professional profiles. Focusing on LinkedIn Learning in college level business classes and/or communications classes may be an opportunity to expand the use of LinkedIn Learning , especially if the professor places emphasis on lifelong learning as an essential employability skill.

Further, LinkedIn Learning is a feasible resource for any college level course that focuses on research. In their experience as a communications professor, the author acknowledges that students often refer to LinkedIn Learning as "academic YouTube," which is a productive colloquialism: students accept that the content on LinkedIn Learning is peer-reviewed, unlike material found on YouTube. LinkedIn Learning is particularly useful for

teaching research principles and explaining concepts such as credibility.

Additionally, LinkedIn Learning yields the opportunity to be especially useful in college departments such as Continuing Education, or in any student academic learning centre that operates as a support to students.

Finally, LinkedIn Learning is able to expand in myriad ways, academically and professionally. All of the applications discussed in this case relate to project management, lifelong learning, career-readiness, and professional development, which are intended or implied outcomes of Ontario colleges.

Conclusions

Analysis of the primary research compiled from student-employees in the Contemporary Web Design and Interactive Media Design programs indicates a clear trend acknowledging the usefulness and user-friendliness of LinkedIn Learning. In departments and cultures that nurture the use of digital resources, students have identified the metacognitive experience of enjoying their learning and being inspired to continue as lifelong learners. Even students who self-identify as being more "hands on" found LinkedIn Learning to be an engaging learning platform that allowed students to learn at their own pace and to surpass their expectations for online learning.

Additionally, considering data from the Annual Review of the Labour Market (Statistics Canada, 2017), an economy of part-time employment and multiple employment is emerging. In such vocations, upskilling and training that is available asynchronously and autonomously is a proven benefit to employees with multiple commitments and various interests.

Broadly speaking, contemporary conversations about pedagogy and andragogy contribute to a culture that does not regard digital technology as a kind of erasure but instead as a tool for broadening one's skills, knowledge, and curiosity beyond a chosen program or employment position. Rather, digital technologies such as LinkedIn Learning help to develop archives, host and make available vast amounts of information, and create a case for making or keeping access public. Advancing such a teaching philosophy, as well as such a management style, further positions Ontario's labour force as being skilled, and Ontario's citizenry as being supported in their curiosity.

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Powers, D. (2013, December 9). *PHP for Web Designers* [Video]. Retrieved from https://www.lynda.com/PHP-tutorials/PHP-Web-Designers/146234-2.html

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7. Efficacy of Learning and Teaching with LinkedIn Learning in Student-Led Reading Courses

SHEIDA SHAHI AND MOIEN GIASHI

Abstract

The efficacy of student-directed research and reading courses can be increased with the accessible and coherent fundamental knowledge base offered by LinkedIn Learning. In the structure of a student-directed research or reading course, new topics are commonly investigated on an individual basis. The benefits of implementing LinkedIn Learning for acquiring background knowledge in a self-directed post-graduate reading course are examined. This case demonstrates how LinkedIn Learning can be used as a learning tool for curriculum development and skill-building support in independent studies, drawing on its fundamental skill-

building assets for non-conventional and individual-oriented teaching scenarios. LinkedIn Learning can be used as a framework and a reliable source for acquiring necessary base knowledge. It has extensive resources and learning paths defined for various topics. Existing paths cover a selective range of topics and do not include all courses related to a topic. Available LinkedIn Learning resources are analyzed for two common independent study topics in engineering and data science. It is anticipated that by offering fundamental skills and resources and an overall framework to students, they will be encouraged to undertake self-directed and research-oriented courses in their postgraduate studies. Increasing efficacy of independent research can yield direct benefits to individual research projects and fill gaps in the availability of specialty post-graduate courses.

Background

Student-led independent study courses demand independent research in a specific topic in collaboration with an academic advisor. In a student-led course,

students often get the chance to develop their own individual syllabus catered to their interests and their larger research projects at hand, or develop skills required in their relevant industries. A reading course allows students to develop a knowledge advantage in a specialized topic of their choice and encourages direct ownership of the educational experience. Students are empowered by pursuing their areas of interest and being at the centre of their learning experience (Marvell, Simm, Schaaf, & Harper, 2013). While students are in control of their knowledge acquisition, academic advisors act as facilitators. The advisor's role is focused on ensuring work is being done within academic frameworks (Marvell et al., 2013). Student-led learning is known to have high impact and efficacy as it promotes reflection and critical thinking and increases motivation through empowerment. For undergraduate students conducting student-led courses, post-graduate studies and innovative career opportunities will be a likely prospect (Walkington, Hill, & Kneale, 2017).

The authors have experience with undertaking self-designed independent courses in science and engineering. In the process, LinkedIn Learning proved to be an effective resource to ensure the base knowledge for pursuing independent topics was addressed. This case will primarily explain and analyze the experience of the authors in undertaking independent study courses with LinkedIn Learning as a primary resource. It will outline the use of LinkedIn Learning as a learning tool in a research reading course. LinkedIn Learning's ancillary support materials for general topics, software, and techniques are

helpful for the development of independent post-graduate studies. In this process, the methodology for creating independent study plans will be explained and a framework will be proposed. These typical outlines will be helpful in breaking the barrier of knowledge for undertaking self-directed research, allowing independent research to be more accessible to a larger body of students.

Structure of Student-Directed Learning

Student-led courses are defined as individual research studies in a field of special interest, designed and implemented by independent undergraduate or graduate students. Students work independently and are supervised by a faculty member. Students must discuss ideas for independent-study with a supervisor of interest and develop the study plan in line with their guidance. The content, scope, and end results are determined by students and agreed on with the supervisor. The outcome of student-led courses is typically either a research paper, written report, or conducted project. These typically outline, analyze, and interpret a single topic in depth. Regular check-in meetings between students and supervisors are recommended for progress tracking and feedback. Independent research classes in most institutions are limited to one with a single supervisor for a total of two for the duration of study. Preliminary research is required by students to determine scope,

objectives, and methodologies for the research or topic to be investigated. After approval by a faculty member, the course will be examined and approved by the department enabling student enrollment (University of Toronto, 2017). In this process, the students are therefore responsible for developing their own learning paths and curriculum. In instances of increased interest in a single topic, a group of students can also conduct student-led research as part of a group, enabling peer-to-peer learning.

Benefits of Student-Directed Learning

Contemporary post-secondary education has shifted from a focus on a traditional advisory approach to one that is centred on student-led and collaborative models. The focus on student-led learning and research trains students as scholars and innovators and prepares them for academic endeavours and careers (Smyth et al., 2016). In a student-directed course, instead of conducting research within a defined research umbrella by faculty, students are given the chance to develop their own topics of interest and research questions. In this way, students can adopt novel expertise and skills (Ho et al., 2013). Within a student-led learning structure, individual creativity in knowledge creation and self-empowerment is strengthened. Student-led learning can also foster an exploratory learning environment in a safe, resourceful, and experimental atmosphere. It is an alternative to faculty-driven education, which is traditionally lecture-

driven and pre-determined (O'Grady, Shahi, & Przybylski, 2014).

Student-led and peer-to-peer learning has strong roots within the University of Waterloo. Collaborative learning is fostered through Waterloo's co-operative education program, where undergraduates alternate between taught academic terms and paid professional internships. The co-operative program allows the dissemination of knowledge between practice and ongoing theoretical investigations. During academic terms, there are many student clubs and initiatives that foster student-led learning. For example, F_RMlab is a student-led group focused on computational design. F_RMlab acknowledges the high speed of change in computational design and encourages a student-led and peer-to-peer learning atmosphere. Co-founded by Sheida Shahi at the University of Waterloo School of Architecture, F_RMlab engages in a lateral model of self-taught and peer-to-peer learning methodologies. Groups of students gather and share their urgency in learning required skills and finding applications relatable to the industry (Ho et al., 2013).

The Role of LinkedIn Learning in Higher Education

With LinkedIn Learning's monthly subscription model students have unlimited, on-demand access to all courses within the platform. The subscription model makes LinkedIn Learning a flexible learning platform where

students can be exposed to a large range of different reference materials, making this platform ideal as a referencing and supplemental learning tool. LinkedIn Learning's pool of topics ranges from design to business and technology to personal skill building. The written and video content is developed by industry experts. The breadth of knowledge available on LinkedIn Learning makes it a useful tool for gaining general knowledge on a variety of topics (Yagil, 2018). Most courses are available at beginner and intermediate levels and are ideal for skill building.

LinkedIn Learning offers almost 6,000 courses in four main categories: (1) development, IT, business, and web; (2) 3D, animation, and CAD; (3) design, marketing, photography, music, and video; and (4) education and learning. The range of available topics makes LinkedIn Learning ideal for supplementing existing professional and educational endeavours (Chen, 2018). It has an accessible learning technology with reliable content and teaching methods. LinkedIn Learning's strength is also in the user's ability to explore new topics, sidestep segments, and focus on particular parts of a topic. While LinkedIn Learning's library provides a range of topics, the course examples highlighted in this case demonstrate how the resources can be used to set up playlists and study plans to gather all facets of a singular topic (Samuels, n.d.).

Case Objective

This case demonstrates the efficacy of LinkedIn Learning as a series of comprehensive and consistent resources for providing a reliable basis for independent studies. This case addresses the opportunities that LinkedIn Learning provides for facilitating more accessible student-led reading courses. The use of LinkedIn Learning provides students with the ability to ensure that basic knowledge can be addressed. The objectives of this study are to outline examples of using LinkedIn Learning in independent research work, and to develop a framework to be used by other students in future reading courses.

Case Methodology

The methodology for this case will include case study analysis of using LinkedIn Learning in the early stages of an independent reading course structure. The role of LinkedIn Learning as a learning tool will be illustrated in two examples of student-led courses. Through the case studies, frameworks for utilizing the resources available on LinkedIn Learning to help structure an independent study will be outlined. The focus will be to highlight the use of LinkedIn Learning for determining specific topics in an area of study on which to focus, for development of curriculum, and for ancillary support of concepts. The use of LinkedIn Learning in independent-study curriculum development will be demonstrated and implementation assisted in making independent studies more accessible

and improving the quality of the experience for independent students. It is anticipated that through more accessible and higher quality independent education, there can be direct benefits for individual research projects as well as addressing the increasing need for developing specialized and applicable post-graduate courses.

LinkedIn Learning's resources are focused on industry-relevant and cutting-edge software. While a range of software applications are covered throughout the platform, typically the focus is on the most in-demand software in each discipline (Figure 7.4 and Figure 7.9). With a considerable number of courses and videos available for each software application, all developed by industry experts, LinkedIn Learning becomes an effective technical resource for advancing these skills. With the help of LinkedIn Learning's ever-growing library of resources, students can continuously develop their skills in areas that are either not offered by the university or outside the expertise of faculty. The following two student-led courses will demonstrate strategies that can be adopted by students for undertaking independent studies with LinkedIn Learning as a primary resource for both curriculum development and skill building.

In the first example, the efficacy of LinkedIn Learning in providing effective base resources and a suitable reference for independent studies will be examined using experience of the authors in the topics of Building Information Modelling (BIM), a major area of research in construction management. In 2018, 10 students showed interest in undertaking independent studies relating to

BIM foundations, scripting, and implementation in the industry at the Department of Civil and Environmental Engineering, University of Waterloo. The second example will illustrate how LinkedIn Learning was used to address the industry need for data science knowledge, specifically data visualization. These two topics were chosen due to growing interest and applicability to both academic studies and industry applications. From this light, the use of LinkedIn Learning in the implementation of one independent study curriculum and study support will be highlighted.

One of the main benefits of LinkedIn Learning is in providing solid background for reliable, self-directed, post-graduate reading courses. Content in LinkedIn Learning can be accessed through its Learning Paths, a series of playlists organized to categorize specialties being offered. While the Learning Paths provided by LinkedIn Learning are a helpful starting point, it is important to complete a thorough study of available resources. As an example, the "Stay ahead in Construction Management" learning path highlights 10 courses related to the topic (Figure 7.3), while analysis into available resources reveals 19 courses available on LinkedIn Learning that are directly related to Construction Management using BIM technologies (Figure 7.2). The following framework is proposed for completing a thorough survey of existing resources on specific topics.

Developed Framework

A general framework has been developed by the authors for examining, organizing, and using LinkedIn Learning's resources on specific topics. It was developed in the process of developing the independent-study courses highlighted in this case (Figure 7.1) and can be used for study plan development of future courses.
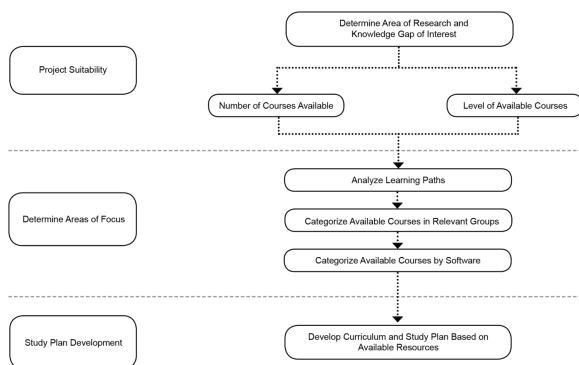

Figure 7.1, Breakdown of study plan planning and development

The framework proposed for student-led independent study planning using LinkedIn Learning resources can be divided in to the three stages of determining project suitability, determining area of focus, and development of study plan.

1. **Determine Project Suitability**

1.1 Research area of interest and breakdown of specific topics related to that field.

1.2 Determine if number of resources available within LinkedIn Learning are adequate for the specific topic.

1.3 Match level of student with available number of courses in the desired levels.

2. Determine Area of Focus

2.1 Analyze the existing learning paths within LinkedIn Learning regarding the desired topic.

2.2 Categorize available courses in the desired topic under relevant groups of topics.

2.3 Determine the software building aspects of topic.

2.4 Determine number of courses available per software program.

3. Development of Study Plan

3.1 Develop a study plan of the different topics determined.

3.2 Determine the software skills to focus on.

3.3 Create playlists of general topics and skill building courses to follow.

3.4 Schedule and fit five hours of online course time per week for the duration of the study.

Course Example 1: Construction

Industry

Building Information Modeling (BIM) is highlighted as one of the growing trends in the Architecture and Construction industries, with 88% of construction stakeholders believing that BIM is powerful in delivering improved design and construction results (Davidson, 2018). The highly collaborative system has impacted various aspects of the construction industry, ranging from the design and engineering process to construction implementation and management. Therefore, it is increasingly important to be adept in software, workflows, methodologies, and management strategies as related to BIM.

Sheida Shahi's post-graduate research focuses on construction management and specifically on the quantified analysis of various adaptive reuse strategies in the residential context. In order to gather required data, 5D BIM models for various simulation software are required. This includes a 3D dimensional model information, scheduling, and cost information for a comparative study. In order to complete aspects of the research project, it was important to identify resources to assist with knowledge building in scripting, BIM management and construction management. While Sheida is experienced with BIM software for architectural applications, a knowledge gap was identified in modelling accurate engineering-based aspects. Topics of interest included advancements in BIM technology and using adjacent and supplementary software to undertake

various engineering simulations. Revit, as the most prominent BIM software in the North American industry, was chosen as the basis of investigation. LinkedIn Learning was used as a resource to advance specific software skills. Other topics of interest included incorporating BIM for construction management, including scheduling and cost-related items not typical in an architectural practice.

In order to determine project suitability, the resources available for BIM on LinkedIn Learning were identified (Figure 7.2). A total of six Learning Paths, 193 courses, and 298 Videos were identified as relating to BIM.

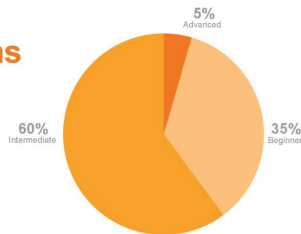**006 Learning Paths**

193 Courses

298 Videos

Figure 7.2, BIM Learning paths, courses, and videos demonstrated by beginner, intermediate, and advanced skill levels

Within these videos, skill level was oriented to the body of resources available, including beginner, intermediate, and advanced. It was anticipated that mainly the advanced videos (5%) and some of the intermediate ones (60%) would be helpful for this investigation.

For determining feasible areas of focus, the learning paths

were identified and the available courses were further categorized and organized by software. The learning paths for BIM identified by LinkedIn Learning were referenced (Figure 7.3). The largest number of courses was clustered in "BIM Coordination," which covers a number of BIM management courses. The learning paths that were most relatable to the topics included "Architecture with Algorithmic Design" (six courses) and "Construction Management" (10 courses).
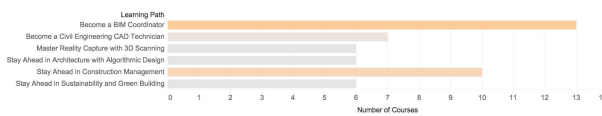

Figure 7.3, Learning Paths identified by LinkedIn Learning as relating to BIM and number of courses available

The construction management learning path was mainly used as a starting point for compiling an outline and courses from the algorithmic design. The courses related to software skill building were identified and categorized according to their relevance to the software. It was apparent that most of the courses in LinkedIn Learning were either relevant to or directly involved Revit, the software under consideration; therefore, it would be helpful to use LinkedIn Learning as a resource for this study (Figure 7.4).
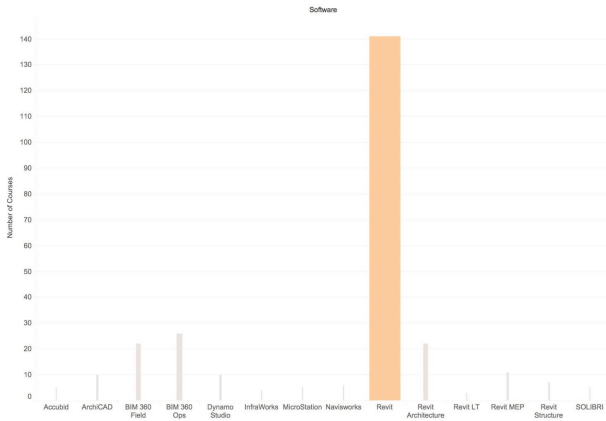
Figure 7.4, Identified number of courses available per software category as relating to BIM

From the 193 courses relating to BIM on LinkedIn Learning, only 48 courses are categorized in the six identified learning paths. Therefore, a thorough study of all courses led to the categorization of all courses in five streams that would be helpful for the individual study: (1) BIM Essential Training; (2) Supplementary Skills, (3) Construction Management with BIM, (4) Scripting with BIM, and (5) BIM Management (Figure 7.5). Essential BIM training included courses relating to software skill building and essential concepts of BIM.

Figure 7.5, Identified categories of focus related to Building Information Modelling (BIM)
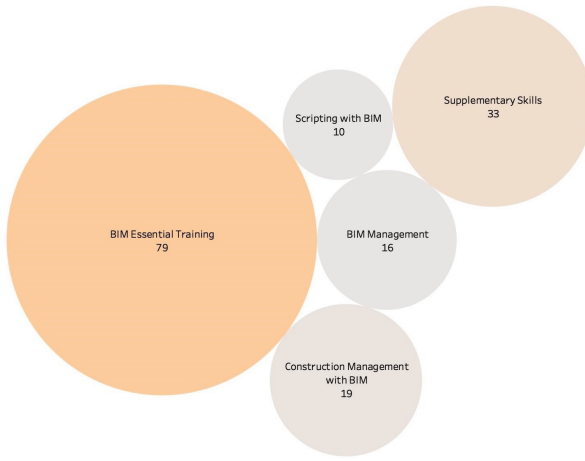
The supplementary skills category included courses that provided resources for supplementary skills related to BIM, including software and techniques for improving workflow and specialization software. As BIM supports collaborative methodologies, a range of open-source and specialty plug-ins are available, some of which are covered in this category. The construction management category includes courses that highlight the role of BIM in the construction management industry, including techniques and relevant software. Scripting within BIM is highlighted in a number of courses for the introduction of scripting within BIM, in order to customize and further develop existing courses. The BIM management category included the courses that address general project management and collaborative working strategies to improve BIM workflow. Lastly, the study plan was developed based on the results of the analysis.

Course Example 2: Data Science

A study done through job listings in various job searching sites found that data visualization is in high demand, with about 30% of data engineering job postings requiring Data Visualization as a core skill (Hale, 2018). LinkedIn Learning's focus on Tableau as a major data visualization platform (Figure 7.9) is in line with the industry, as Tableau is the most requested data visualization software on job listings in 2018 (Hale, 2018). The field of Data Science has been advancing at a rapid pace, with the demand for Data Scientists in the industry projected to increase by 28% by 2020 (Columbus, 2017). Since the market demand for this skill is rising, the applications in academic studies and research are becoming ubiquitous. When large amounts of data are generated in any typical research project, being able to process and visualize the data is of paramount importance.

The following section will focus on Moien Giashi's use of LinkedIn Learning for understanding the different resources available for data science and will outline his use of LinkedIn Learning. This includes use for curriculum development and as a reference tool for independent studies of data visualization. Moien's approach follows a similar framework structure demonstrated in the previous example.

In order to determine project suitability, the resources available for Data Science on LinkedIn Learning were identified (Figure 7.6). A total of 13 learning paths, 109 courses, and 160 videos were available on the general

topic. Data science topics in LinkedIn Learning are structured to provide a substantial amount of introductory content for a beginner in a topic (32%), with the majority of the content focused on skill building at the intermediate level (58%) and about 10% of content focused on specialty and advanced topics.

013 Learning Paths

109 Courses

160 Videos
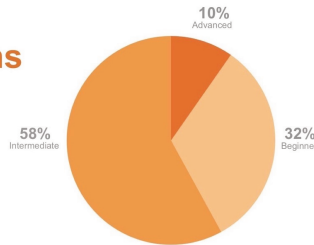
Figure 7.6, Data science learning paths, courses, and videos demonstrated by beginner, intermediate, and advanced skill levels

The large number of beginner and intermediate courses was suitable for an introductory course. Next, in order to determine areas of focus, the learning paths relating to data science were identified and analyzed. While most of the learning paths focused on data analytics and business (Figure 7.7), a learning path on data visualization was identified and used as a starting point.

Learning Path

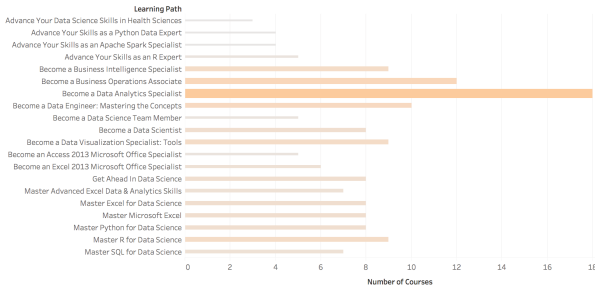|	
Advance Your Data Science Skills in Health Sciences	
Advance Your Skills as a Python Data Expert	
Advance Your Skills as an Apache Spark Specialist	
Advance Your Skills as an R Expert	
Become a Business Intelligence Specialist	
Become a Business Operations Associate	
Become a Data Analytics Specialist	
Become a Data Engineer: Mastering the Concepts	
Become a Data Science Team Member	
Become a Data Scientist	
Become a Data Visualization Specialist: Tools	
Become an Access 2013 Microsoft Office Specialist	
Become an Excel 2013 Microsoft Office Specialist	
Get Ahead in Data Science	
Master Advanced Excel Data & Analytics Skills	
Master Excel for Data Science	
Master Microsoft Excel	
Master Python for Data Science	
Master R for Data Science	
Master SQL for Data Science	

Number of Courses

Figure 7.7, Identified learning paths identified by LinkedIn Learning relating to data science, with number of courses available

Though nine courses have been identified by LinkedIn Learning's Learning Paths as relating to Data Visualization, there are 28 different courses that focus on the different aspects of learning about data visualization. The available courses were organized in the following groups: learning data visualization software, understanding the data visualization process, and learning about the applications of data visualization. Courses related to data visualization were broken down to the three categories: data visualization software (18), data process visualization (seven courses), and application of data visualization (three courses).
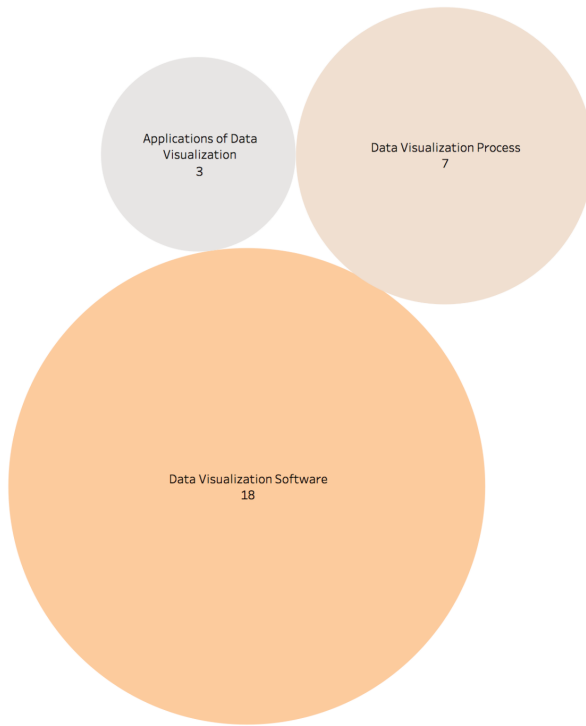
Figure 7.8, Identified categories of focus related to data visualization

Moien Giashi's study plan for learning data visualization was therefore based on the three identified categories. Starting with the data visualization process topics, the courses were used as introductory material for learning about background information, overview of concepts, and general introduction into working methodologies. In the second stage, Moien focused on specific software skills. All the relevant courses were surveyed and different data visualization software was identified (Figure 7.9).
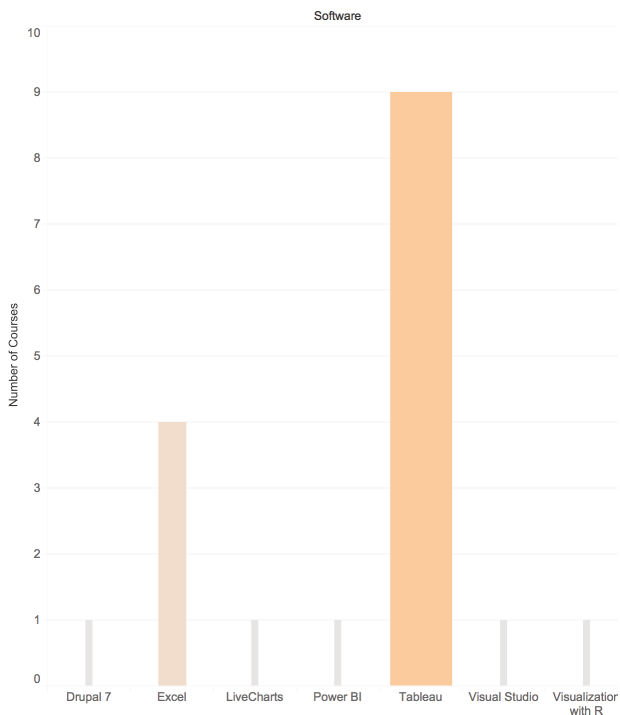
Figure 7.8 Identified number of courses available per software category relating to data visualization

The courses available for each software category relating to data visualization throughout LinkedIn Learning were identified. While a range of software was introduced, the two major tools include Excel and Tableau, with Tableau having a greater number of available courses. Moien therefore decided to focus on learning Tableau as the main data visualization platform in his investigation and decided to use the Excel courses as reference to complement learning as required.

Pedagogical Considerations

The framework identified in this case was developed in order to facilitate and ensure efficient use of LinkedIn Learning's resources in student-led independent studies. It can be used for examining, organizing, and using LinkedIn Learning's resources on specific topics. The framework can be used to determine the suitability of a topic in relation to available resources, to determine feasible areas of focus as relating to a specific topic, and to develop a study plan for undertaking independent courses. The need for this tool arises from the breadth of topics and resources available in LinkedIn Learning while acknowledging the effort required to search for and collect resources effectively. In the experience of the authors, the development of the framework assisted in evaluation of topics and in expediting the process of study plan development, ensuring the quality of independent studies.

Facilitating student-led learning is important for post-graduate studies as it promotes reflection and critical thinking and increases motivation through empowerment. With an overall framework for making online resources more accessible, it is anticipated that students will be encouraged to undertake self-directed and independent courses in their studies. It was demonstrated in this case that the efficacy of student-directed courses can be increased with the accessible and coherent fundamental knowledge base offered by LinkedIn Learning. The increased accessibility can have

direct benefits to individual research projects and can fill gaps in the lack of available specialty post-graduate courses.

It was demonstrated in this case that the structure of student-led courses, together with available LinkedIn Learning resources, can play a large part in the improving quality of student engagement. The large range of available topics makes it ideal for experimenting with new topics and supplementing existing professional and educational endeavours. The use of LinkedIn Learning in independent-study curriculum development assisted in making independent studies more accessible and improving the quality of the experience for independent students. It is anticipated that student-led studies can act as a test bed for generating new knowledge, leading to new curriculum development in universities. LinkedIn Learning's extensive topics and well-versed resources are a reliable starting point for this endeavour.

Conclusion

There is a need to highlight the importance of independent research and individual learning. A large part of the independent research process is creating an individualized learning plan to manage the wealth of resources available through LinkedIn Learning. Through the authors' experiences, it became clear that creating a comprehensive and coherent framework for assessing and accessing foundational knowledge allowed

independent research and reading courses to become more accessible and manageable. The authors have created a framework for students partaking in an independent research or individual learning program that allows them to efficiently create a body of dependable and comprehensive foundational knowledge regardless of the subject matter. The authors found that the use of the framework made independent studies and research more inviting and accessible.

List of LinkedIn Learning Videos

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About the Authors

Amanda Baker Robinson, Humber College and Canadore College

After completing her B.A. and M.A. in English, Amanda Baker Robinson began working as a post-secondary professor in 2008. Within a few years, she developed a fascination with online teaching and learning. She noticed that drop rates were much higher in online courses and students frequently struggled to stay on track. She wanted to know why, and what she could do to combat these challenges. After gaining her certification in Online Design and Development, she became an instructional designer for Humber College and subsequently Canadore College. For the past five years, Amanda has thrived in this role, invigorated by the constant stream of technological innovations that can be creatively leveraged to address the challenges, and exploit the strengths, of online instruction and learning. To date, she has worked on over 80 online course builds at Humber College and Canadore College in a wide variety of disciplines. Amanda also continues to teach online part-time, as she feels teaching helps her to be a better designer.

Brandon Carson, Durham College, and Ashley Marshall, Durham College

Lead investigator, Brandon Carson, is an experienced educator with a passion for staying up to date on the most current trends in education and technology. His experience as a Learning Technology Specialist at Durham College's Centre for Academic and Faculty Enrichment puts him in close proximity with LinkedIn Learning and its uses, which further informs his expertise on the benefits of professional development, just-in-time learning, and institutional support for all members of the college community. As a professor at Durham College, he meets the need to design and deliver curriculum that is engaging and accessible, and addresses the needs of all learners. As a lifelong learner, Brandon recently completed his Bachelor of Arts in Adult Education and Digital Technology at the University of Ontario Institute of Technology (UOIT) and is currently enrolled in the Master of Arts in Learning and Technology program at Royal Roads University (RRU), completing thesis work on open educational resources. Outside of his roles at Durham College, he is currently working in the Faculty of Education at UOIT to develop curriculum for the Educational Studies and Digital Technology program to provide students with the opportunity to complete an experiential learning exit pathway from the program.

Ashley Marshall in a Professor of Communications at Durham College, M.A. English, B.A. Hons English and Cultural Studies/Critical Theory both from McMaster University. Ashley has valuable experience designing and

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Both professors of Durham College, Ashley and Brandon have collaborated on various projects. They each earned scholarships offered by eCampusOntario to attend and participate in Digital Pedagogy Lab 2019. While all sections are a collaborative effort, Brandon bestowed his expertise in Educational Technologies in specific sections by performing primary research and compiling evidence for the section Observations of Past Employee Development and all sections of participant feedback. Meanwhile, Ashley added content elaborating on critical pedagogy in the sections pertaining to the Background, Pedagogical Reflections, and Opportunities for Expansion.

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Chris Kosloski is a Professor of Digital Cinematography and Program Coordinator for the Digital Cinematography and Post Production Programs at Canadore College in

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Jennifer Rouse Barbeau has been a program coordinator and professor in the Advertising and Marketing Communications (ACM) program at Canadore College since 2006. The two-year ACM program builds business, creative writing, and design skills. In her private life, Jennifer is a published author and illustrator and a small imprint publisher of what she calls "artisan" books — unique, well-crafted stories with individualized print runs. She holds a Master of Education from the University of Prince Edward Island (UPEI) and a fellowship degree from the Ontario College of Art and Design (formerly OCA, now OCADU).

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Sheida Shahi is a Ph.D. student and Mitacs Accelerate Fellow in Department of Civil and Environmental

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Moien Giashi is a Ph.D. Candidate and Vanier Scholar in Chemistry Department at the University of Toronto. He earned his B.Sc. in Polymer and Material Engineering from Tehran Polytechnic University and his M.Sc. in Chemical Engineering from the University of Alberta. He is currently a researcher in Eugenia Kumacheva's Group and his work focuses on the application of microfluidics and 3D printing for generating new classes of materials. Moien is a business consulting enthusiast actively engaged with University Consulting Group and the Graduate Management Consulting Association at the University of Toronto.

Brittany Starkman, York University

Brittany Starkman is an educator, award-winning multimedia producer, and educational technologies enthusiast from Toronto, Ontario. Alongside her career in media, Brittany is passionate about teaching and inspiring students. She is an Ontario Certified Teacher

who is currently completing a Master of Education degree and will be starting a doctoral degree in September 2019. Brittany has taught at Ryerson University in the RTA School of Media, leading lessons and workshops in courses such as Sound Production, Multi-Camera Production, Sport Media, and Sound Synthesis. She has also facilitated webinars and workshops on multimedia tools and educational technologies for faculty and staff at York University. With strong passions for education and media production, Brittany is fascinated by the evolution of online learning and aspires to be on the forefront of revolutionizing this movement.