Technology Evaluation Report:
edX Edge

Report Contents

Note: This report summarizes outcomes of a specific UBC pilot. Findings do not reflect broader or official UBC opinions about the learning technology evaluated.

Executive Summary

This evaluation looked at select UBC courses in edX Edge, a learning technology platform being piloted by instructors in various disciplines. Six instructors and five support staff involved with Edge courses were consulted during one-on-one interviews in May/June 2017. Fifteen instructors and support staff also responded to a survey run in May/June 2016.

The feedback surfaced common themes in strengths and weaknesses of Edge. Pros of Edge included: the power of its learning module layout and online engagement activities, the positive and mostly intuitive student and instructor user experiences, and the reliability of the platform. The main issues with Edge included: the clunky registration process for students (due to FIPPA regulations), the at-times overly simplistic nature of the platform (including lack of robust support for grades, groups, assignments, and discussions), and the ever-evolving state of the technology.

Based on this evaluation, Edge is best applied at UBC by instructors comfortable with changing technology who teach courses that:

1. Would benefit from self-directed learning modules,
2. Want more online student engagement options, and/or
3. Require more openness or aim to be offered as a MOOC.

Instructors planning to use Edge should know the significant limitations of Edge (as noted above), set aside time to design the course specifically for this platform, and understand the costs of working in an evolving space. Institutional support should include continuing to offer an integration for Edge inside the new LMS, clarifying where to go for help in the post-pilot phase, and explicitly linking to edX documentation and online how-to courses.

Goal

This evaluation looked at select UBC courses in edX Edge, a learning technology platform being piloted by instructors in various disciplines in blended and fully online contexts. The primary goal was to surface high-level recommendations on best practices for using Edge, both in how instructors apply it and in how staff support it.

Assessing learning outcomes was not part of the evaluation.

Methodology

Six instructors and five support staff involved with Edge courses were consulted during one-on-one interviews in May and June of 2017. The instructors all had courses that used Edge for the majority of online course content. The staff supported these Edge-immersive courses as well as courses that used Edge more lightly.

Each interview consisted of ten core questions with a final open-ended question to capture any other feedback not yet discussed (see Appendix A.1).

The types of Edge courses covered by participants included Applied Science, Arts, Computer Science, Civil Engineering, Education, Law, Midwifery, Physics, Political Science, Psychology, Vantage College, and internal professional development workshops. Most Edge courses used videos, page content (straight HTML, textbook uploads), self-test and graded assessments, and add-on activity tools (e.g., peer instruction, response mapping, image annotation). Some courses used custom coding, discussion forums, and analytics. Few if any courses used grades, assignment submissions, or groups (aka cohorts in Edge).

Fifteen instructors and support staff also responded to an Edge survey run in May and June of 2016. The survey included five general questions (see Appendix A.2), and the results were folded into the findings here—though it should be noted some of the respondents likely overlapped with the interviewees.

No trace data or classroom data was gathered.

Findings

Instructor motivations

Better pedagogical and technical option than Connect

Most Edge users were driven to the platform by the pedagogical and technical shortcomings of UBC's current learning management system (LMS), Connect. For some, Edge offered more options and flexibility in terms of course design—*"the kind of functionality that I couldn't find on Connect"*—such as a wider variety of assessment activities and the ability to use custom code. For others, Edge simply *"has a better look and feel"* and *"presented itself more nicely"* than Connect, where *"the interface there is embarrassing"* and *"miserably presented"*. Edge was also frequently noted for its *"simplicity"* and high ease-of-use compared to Connect, with a sense that instructors *"felt really at home with it"* from the start.

Flexibility of learning module layout

But Edge is more than just a Connect alternative, and most Edge users also chose it for the power of its learning module layout. This layout *"supports a tight interweaving of content presentation and assessment"* in distinct modules, so students *"move through lessons in a sequenced manner"* as they progress through the course. The learning modules enable students to *"check their understanding and get feedback as they go along"*, without having to access another area of the course site to do this (e.g., go take a quiz elsewhere and then navigate back to the lesson). Edge users felt this layout would help them achieve larger pedagogical goals to *"support active learning"*, *"self-directed learning"*, and a *"flipped/blended classroom approach"*.

Platform also supports MOOCs

A side motivation noted by some users for selecting Edge is that its vendor, edX, supports Massive Open Online Courses (MOOCs). Some instructors started with a MOOC or aspired

to a MOOC. Even if other platforms might offer similarly powerful learning modules, they figured *"Why not get into a platform that could evolve?"* to the MOOC level. Especially for those investing significant time to redesign a course for an online context anyway, they thought *"Why would we do a thing that can't scale?"*

Opportunity to work outside university constraints

A lesser yet notable additional reason for some users choosing Edge is *"the freedom of not being in the LMS"*. This freedom means being outside official university processes and timelines, access to open authentication to allow for non-UBC guest logins, and the chance to *"work outside the box"* in a more experimental, evolving space. Even with the upcoming LMS replacement (which may improve some noted problematic aspects of Connect), a few instructors already plan to continue using Edge instead, specifically because it lets them share course content *"off grid"*.

Other, less common rationale for using Edge included that: 1) Edge could be used to *"create a central space for distributing resources"* (especially when using one Edge course embedded in multiple Connect courses), 2) its use could *"reduce the number of platforms they [students] use"* (for courses that were Edge-intensive), and 3) it offered the chance to simply *"try something new"*.

Instructor response to using Edge

Good flow and integration of content and activities

Since the learning module layout was one of the core reasons people selected Edge, it is not surprising that many Edge users found the learning modules to be a major strength of the platform. The word that came up repeatedly to describe the modules was *"integration"*. Edge allowed faculty and staff tell a *"story"* in the way they designed course content and assessments, one where *"you can visually see the lesson plan"* and *"create a narrative"* of what students should understand at distinct points in the course. For students, this built a clear path to learning with *"a nice consistent sequence you can move along easily"* where *"you're never pulled out of the sequence"* to complete work somewhere else and then have to find your way back—instead, *"the content all flows together"* in one persistent space.

Perception of better student experience

The student-friendly user experience was also highlighted by most Edge users as another benefit of using Edge. Anecdotally, *"the students are very positive about it"*, primarily *"because it actually looks like a modern program"* to them, *"it creates more consistency"* as they move through the course, and overall *"it is nice and easy to use"*, especially in contrast to Connect. One user mentioned looking at analytics of videos on Connect and the same videos on Edge, and found *"students used the materials much more on Edge"*. Another user, whose students used each platform for different timeframes of the course, asked students to compare Connect navigation to Edge navigation, and *"the majority [above 70%] preferred the edX navigation"*.

One instructor shared survey comments from students responding to the prompt: 'What did you think of the edX website for this course, as compared to websites you've used in other courses?' Of the 114 respondents, 82% shared positive things about Edge, while only 15% said negative things. The top themes of the positive student comments were that Edge was easy to use, simple to navigate, and helped with learning (the content itself as well as meeting requirements on time).

Good ease-of-use allows focusing on pedagogy

Likewise, the instructor user experience was equally positively rated by most Edge users (both instructors and staff). Though an initial learning curve was acknowledged by some, Edge was largely viewed as *"intuitive"*, a *"simplistic"* and *"easy to work platform"* with clear navigation and a *"very clean design and interface"*. This translated to a feeling that *"you don't need technical skills; you can build a lot"* without having to know a lot. That meant instructors *"didn't have to invest too much time to figure things out"* and less external help was required. As one staff member put it, Edge *"really seems to be building literacy on a different level than other systems"* like Connect, so *"I'm hardly dealing with anything"* (allowing the staff member to focus more on pedagogical support of those courses).

More technically reliable than Connect

Part of what contributed to a good experience was that Edge performed in highly reliable manner for most users. The platform was perceived as *"rock-solid"* in terms of access with *"straight up no crashing, no waiting"*, particularly in comparison with Connect—*"we've never had a student say it broke down"*. The fact that *"it just runs...can't be overstated, in terms of helpfulness for students but also someone creating content on it"*. From the instructor perspective, an unreliable learning technology creates a frustrating ripple effect where *"you're dealing with the problem and the fallout of the problem"* once it's resolved (e.g., accommodating students who say they couldn't access the platform during an outage and therefore missed a due date). The absence of this issue made a significant positive impact.

Other pros of Edge related to the specific functionality used in various courses. Some users noted the *"useful"* analytics (as presented on the progress page and Insights dashboard), the *"immediacy"* of feedback and numbers of options for assessments, and the helpfulness of features like the video display, course export, and syntax highlighting (when looking at a code view of course content).

Challenges in signing students up

By and large, the main headache mentioned by nearly all Edge users was the registration of students into the platform, especially for those courses using Edge activities to inform student grades. Due to edX's US-based servers and BC's FIPPA regulations, student UBC IDs must be obscured in Edge, and this can create difficulty in tracking and grading students. *"It's one of the biggest limitations of the platform"* that *"identities are kind of encrypted"* and *"we end up with students...with usernames that are a 47-digit number"*. While UBC can provide a rough mapping and continues to work on this issue, most people acknowledged *"there's an upper bound on how good that can work"*. This is in part because *"you could have the same person logged in many times"* (as students can unintentionally create multiple accounts), so not even internal custom mapping is foolproof.

Limitations to what Edge can pedagogically support

The second biggest issue for Edge users was that the platform sometimes feels too simplistic. It's clear to many people that Edge is less powerful than Connect and that *"an*

LMS is a more mature tool…you don't get that with Edge", and this means *"it can't be everything"* for a course. This requires a certain level of flexibility when designing a course, which for some means figuring out *"how do you adapt it to do more advanced things"* (looking for workarounds, e.g., creating individual problem libraries on a question-by-question basis to enable randomization) and for others *"adapt[ing] my practice on what is available or not"* (working within limitations, e.g., building discussions into in-person class time instead). Additionally, Edge constrains the customizations available, so instructors may not be able to control parts of the course in as granular a way as they are used to with Connect or other learning technologies (e.g., allowing for late assessment submissions).

Similarly, Edge's lesser-used features were less used because they were not robustly designed. Edge users in particular noted missing functionality with grades, discussion forums, groups, and assignment submissions. *"The ability to mark students and provide individualized feedback to students is limited"* with Edge's gradebook, *"if there's a lot of discussions, there's a lot of manual labour"* in managing the forums, *"groups are pretty clunky"* and not seen as a good way to enable student collaboration, and *"it's not set up for instructors viewing individual work"*. In these cases, many instructors and staff used replacements to compensate—such as embedding Edge in Connect to use Connect's gradebook, using Piazza for discussions, letting students *"use their own social media of choice"* for group work, and collecting assignments via other means (e.g., in class, over email).

Lack of stability with rolling platform updates

The final common weakness mentioned by some Edge users was the high rate of change for the platform. *"It gets constantly updated"* with minimal notification ahead of time, so the sense is *"when edX does something, you're at the mercy of edX"*. If you work with Edge, you need to be prepared to make fixes to course content and assessments at any time. This can create frustration with some updates, especially in trying to get support with rolling changes; *"it's hard to get answers"* when you don't have a version to reference.

Other cons of Edge mentioned pertained to specific needs of individual courses or instructors, like the desire to upload private videos, download a more standardized course export, or customize the look and feel of the student navigation bar.

Recommendations

Based on this pilot's outcomes, these are some recommendations for how edX Edge could best be implemented at UBC to maximize its perceived benefits and minimize its perceived shortcomings.

1) Encourage use with innovators or early adopters of new technologies

Because Edge's development is ongoing, all these use cases are probably best executed with instructors who are comfortable with changing technology (e.g., innovators or early adopters).

2) Apply in courses that can benefit from self-directed learning modules

Edge is good for *"low-touch teaching"* when instructors want to *"make sure the students are self-sufficient"* when it comes to understanding course content. By presenting the course in a sequence of learning modules that integrate text or video content with interactive components, instructors can offer a more engaging, immersive learning experience for students learning on their own. This approach may be especially helpful for instructors practicing a flipped classroom and for sessions of *"teaching at scale when you can't individualize learning very much"* in larger courses.

Complementing this self-directed use of Edge with collaborative and individualized learning activities is strongly advised to create a more personalized and well-rounded course experience. In this sense *"Edge is extremely well-suited to the existing bricks-and-mortar university environment"*, where group- or team-based learning can easily be built into in-person classrooms. Although, fully online courses can look to other learning technologies to provide supporting collaborative experiences as well.

3) Promote with instructors who wish to increase student engagement, openness, or aim for a MOOC

Edge is also a good option for instructors who want a wider variety of ways to engage students with course content. Edge provides *"more features and tools that allow for student engagement"*, creating *"space for students to show their participation"* with highly customizable assessments but also *"to demonstrate knowledge of understanding in non-quiz fashions"*.

Notably, the list of *"specialized tools"* that can be used within Edge continually evolves as edX grows. Because the platform is based on open-source code, *"it's often easier to build tools"* since more people can contribute, including UBC developers. This means not only can instructors try out new tools, they can potentially *"contribute to and change"* what's in development, either by playing with code themselves or assisting the team(s) involved.

Edge is a logical choice for courses that want to provide more openness than a traditional LMS-based course, including those that may eventually wish to open up for massive enrolment. Designing courses on Edge allows instructors to *"get familiar with the platform...then transfer that to the creation of a MOOC"* using edX.

4) Make sure instructors know what Edge is NOT

Any instructors starting with Edge should first familiarize themselves with its limitations—*"it's not an LMS"* and *"it's not groups, it's not grades, it's not late submissions"*. Though these boundaries can be pushed, Edge is more for content delivery and self-assessment. In its current state, Edge is most easily implemented as an embed within a traditional LMS like Connect, which allows *"the best of both worlds"*; instructors can utilize Edge's learning module layouts and interactive engagement options while still using the LMS for grades and possibly groups.

For those instructors wishing to use Edge for graded work, *"minimalize the use"* in case something goes awry with mapping the student identities, and try to avoid using Edge for *"high-stakes stuff where little [platform] changes could make a big impact"*.

5) Take time to properly design courses for the Edge platform

Good Edge course design takes time, and instructors looking to use the platform should start with an *"understanding of what good design is in edX"*. Edge works best when *"you have the learning modularized"*, so *"you can't push everything under the sun into [Edge] and expect students to use it"*. This is not meant to be merely a content repository. Edge *"disciplines you"* to think about how to present teaching in clear segments that *"integrate questions"* to *"engage students very quickly"* around related content. Instructors unused to this approach should take the opportunity *"to think in different ways about how to put material together"* and how these learning modules will complement other aspects of the course.

6) Explain the costs of working in an evolving and unofficial space

Finally, any instructor considering Edge should recognize the tradeoffs of working with the platform. First, know that *"you're on the edge of technology"*, so *"you have to be ready to adapt"* as the technology changes. This means being prepared to make updates when the platform does and *"maybe don't use screencasts"* to demonstrate Edge workflows to students; point to edX documentation instead. Second, *"understand your academic policies"* and what instructors are responsible for in terms of maintaining academic records.

7) Continue to offer an LMS integration

Because Edge does not offer the full functionality of an LMS, it's important to offer its use within the context of an LMS. This means *"if we're changing [the LMS], there might need to be some new integration"* developed to ensure content from Edge can still be embedded going forward.

8) Clarify where to go for support, including edX options

While many users reported not requiring much or any support in using Edge, *"there's no clear fine guidelines"* of where they are supposed to go for help, especially since this

platform is technically still a pilot. Instructors often had one support staff they knew they could contact, but *"when you want very, very deep help, it's hard to know where to go"*.

Moving Edge from pilot phase to full support and communicating this through the LT Hub would resolve this in part. Additionally, a contact page of *"people who had experience with the tool"* was suggested, especially for *"leveraging people who have worked on MOOCs"* and could offer insight into technical as well as pedagogical issues when teaching at scale.

edX maintains up-to-date documentation described by most users as a good resource—*"usually the docs help for like 90%"* or more of the basic issues. Clearly publicizing links to this documentation on the LT Hub website and elsewhere is advised, as well as directing users to the online courses edX provides for setting up a course. Finally, letting support staff know they can read about new features and contribute to issues on GitHub may be beneficial to those who aren't aware of this option already.

Implementing edX Edge with these recommendations may help resolve some of the concerns brought forward by instructors and students and improve future users' perceptions of the tool's pedagogical value.

Appendices

Appendix A - Instruments

A.1) One-on-one instructor interview questions

1. What inspired you to use Edge?
2. How do you use Edge?
3. What works well?
4. What doesn't work so well?
5. How does your use of Edge compare to your use of other learning technologies?
6. How, if at all, has your use of Edge changed over time?
7. When you/instructors get stuck, how do you move forward?
8. Do you plan to continue using Edge? Why or why not?
9. What is one thing you would like to see changed going forward?
10. What advice would you give instructors who may be considering using Edge for their courses?
11. Any other feedback you'd like to provide?

A.2) Instructor survey questions

1. Why did you want to use edX?
2. To what extent did you build a course on the edX platform (built all - built half - prototyped one module)?
3. How did you use the edX platform? Please briefly tell us what edX content and assessment types you used, whether you used video etc.
4. What worked well?
5. What needs to be improved?