The evolution of online course development at McMaster Continuing Education

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ABSTRACT

This reflective piece charts the evolution of McMaster's Continuing Education online course development team, with the aim of drawing out a series of broader lessons about the changing nature of teaching and learning in the digital domain. The first lesson is the importance of a professed commitment to teaching and learning innovation and attendant instructor development and support with a dedicated staff of digital learning experts. Second is the necessity of remaining nimbly responsive in the face of a rapidly evolving higher education (and wider societal) landscape, to ensure that the full potential of both instructors and learners can be continually realized in an environment where change is the only constant. The third lesson addresses the value of leveraging this institutional capacity to tap into and establish an active presence of collaboration around innovation in post-secondary teaching and learning. In short, the following account of McMaster Continuing Education's ongoing journey through the challenging terrain of online learning yields productive insights for committed educators across all branches of post-secondary teaching and learning.

KEYWORDS
online, digital, virtual, education, design

McMaster Continuing Education (MCE) has a decades-long history of innovation in adult and professional education, which has more recently included leadership in the development of online courses and programming. By the mid-2010s, MCE had established a significant footprint in this area, with nearly half of all programs available through online instruction. All indications within MCE's learner market at that time suggested a need for more courses and programs to be made available through this mode of delivery, and this became a central goal of the unit over the short- and medium-term.

However, the established course development processes at that time were not ideally suited to ensuring that new online offerings reflected best practices in digital pedagogy. The process was overseen by program managers, whose remit included not only administering programs but also managing instructors, including their development of course content. This was workable when most offerings were in the traditional face-to-face format, premised on

significant instructor autonomy in the classroom. But with the emergence of online delivery as a dominant modality, it became challenging to add the necessary research and associated work involved in developing and launching new online programs on top of this broad portfolio of responsibilities.

MCE therefore determined that the status quo was not sustainable since it is only through the ongoing introduction of new courses and programs available in online formats that growth can be maintained. This is a particularly acute concern for continuing education units, which are self-funded operations and thus reliant on attracting new students through continuous programming innovation in a way that other branches of a public university typically are not. Similarly, continuing education units also serve as a crucial touchpoint between the university and traditionally underserved communities within their cities, meaning that continually updating and expanding programming to meet the unique needs of, for instance, new Canadians and other groups seeking economic equity is a central concern. Yet an ongoing expansion of online offerings demands that a rigorous, standardized approach to development be established to ensure quality and consistency across all programs. Research has revealed that the creation and maintenance of such a process involves a significant commitment of time and effort, and often requires those participating to learn new skills, both technological and pedagogical (Bussmann et al., 2017). Expecting the already busy program management staff and part-time instructors primarily drawn from industry to make this commitment was unrealistic. In 2016, MCE management consequently decided to build a course development team that would work exclusively on the development of online programming. The team would consist of a group of online education specialists who could work collaboratively with subject matter experts (SMEs; see Appendix A for a list of abbreviations used throughout) to design rigorous and innovative courses that focus on high levels of student engagement and achievement.

The remainder of this chapter charts the evolution of MCE's online course development team from its inception in 2016 to the present by describing how the team has grounded practice in theory, created a quality standards framework, set up instructors for success, rolled out emerging technologies to enhance student engagement, and adjusted approaches and design strategies to serve the needs of students. In sharing this evolution, the aim is to draw out a series of broader lessons about the changing nature of teaching and learning in both adult/professional educational contexts and higher education more broadly. Three such points are of particular note. The first is the importance of backstopping a professed commitment to teaching and learning innovation and attendant instructor development and support with a dedicated staff of digital learning experts who are capable of guiding the practical execution of such aspirations. Second is the necessity of remaining nimbly responsive—or, to use a project management term of art, "agile"—in the face of a rapidly evolving higher education (and wider societal) landscape, to ensure that the full potential of both instructors and learners can be continually realized in an environment where change is the only constant. The third point builds on these first two and concerns the value of leveraging this institutional capacity to tap into and establish an active presence within the dynamic networks of collaboration around innovation in

post-secondary teaching and learning that are emerging at an increasingly rapid pace. Not only can these networks provide valuable sources of funding to support cutting-edge experimentation in digital pedagogy, but the broader benefit of keeping an institution at the forefront of best practices in this area helps enhance its ability to effectively meet the needs of an increasingly diverse community of learners and society more broadly. In short, we hope that the following account of MCE's ongoing journey through the challenging terrain of online learning can yield productive insights for committed educators across all branches of post-secondary teaching and learning.

GROUNDING PRACTICE IN THEORY

Quality framework for courses and programs

MCE's approach to creating an online educational development team and establishing its operational processes was guided by the latest research on best practices. The first consideration here was that quality standards are fundamental for driving effective online learning (Bigatel & Edel-Malizia, 2018). Indeed, universities and colleges are increasingly using specific quality frameworks to ensure that their online learning offerings are of the highest caliber. In researching the various frameworks for quality online learning that might inform the development team's composition and approach, MCE drew on several tools in use across the higher education landscape. Resources such as those provided by Quality Matters (2022) and eCampusAlberta's (2022) *Rubric for Course Design* were reviewed, and elements were adopted where appropriate to enable MCE to create a customized set of principles that would be used to guide course development.

Grounded in established instructional design standards, digital pedagogy best practices, and evidence-based educational theory, the framework—McMaster Centre for Continuing Education QA Standards Checklist—focused on several key areas, including:

- web design standards (i.e., format, usability, navigation, legibility, readability)
- course information standards (i.e., course outline formats, instructor communication, learning outcomes, grading information, roles of instructor and learners)
- writing standards (i.e., bias, tone, citations, mechanics of writing, clarity)
- resource standards (i.e., currency, authority, legal and procedural requirements, learner support, variety)
- organizational standards (i.e., time commitments, learning materials)
- pedagogy standards (i.e., clarity of instructions, marking criteria, instructional strategies, interactivity and engagement, feedback for students, feedback for instructors)
- technology standards (i.e., multimedia, orientation)

These elements were combined into a rigorous and comprehensive framework that has been instrumental in ensuring that MCE's online programming meets the highest possible standards.

The role of instructional designers

MCE management also determined that, in accordance with the most up-to-date research, instructional designers (IDs) would need to play a major role in the leadership and design of online learning content (Czerkawski & Lyman, 2016; Hultberg et al., 2018; Morris, 2017, 2018). This type of learning professional can be a driving force for innovation and quality, bringing together a variety of skills in educational technology and pedagogical expertise that the part-time instructors in continuing education cannot be expected to fully provide. While the primary role of IDs is that of advisor to instructors and departments on curriculum and course quality issues, they also play a vital role in identifying the professional development needs of instructors (Chao et al., 2010). IDs bring an in-depth understanding of the digital learning space and are confident maneuvering therein, thus offering a clear understanding of the complex interplay of learning, teaching, and technology (Morris, 2018).

ONLINE COURSE DEVELOPMENT: A COLLABORATIVE PROCESS

Research also makes clear that online course development is best carried out through a collaborative process, since designing high-quality online learning requires various sources of expertise not typically possessed by a single person (Chao et al., 2010). Moreover, the development of online courses demands a longer window of time compared to their face-to-face equivalents and requires pedagogical models that are more sustainable and consistent than the "lone ranger" model, in which an instructor learns how to design and teach essentially by trial and error (Bates, 2008; Knowles & Kalata, 2007). Successful online courses are therefore the result of a collective effort by staff who combine to bring instructional design expertise, technical knowledge, and subject matter specialization to bear on the project (Oblinger & Hawkins, 2006). Accordingly, the development process that MCE established concurrently with the staffing of the team was explicitly collaborative, premised on an iterative, feedback-driven approach aimed at most effectively synthesizing the SME's content knowledge and the designer's pedagogical expertise.

Focusing on learner engagement

In addition to these more practical concerns, the more abstract rationale behind the new online course development approach at MCE drew on the growing body of work directed toward re-imagining and redefining how online learning should take place in an effort to yield greater learner engagement, contribution, and satisfaction (Angelino & Natvig, 2009; Czerkawski & Lyman, 2016; Jacobs, 2014; Kupczynski & Mundy, 2015; Wyatt, 2011). This means looking for new ways to achieve learning that empowers learners, provides more choice, allows for greater levels of applied learning, and enables learners themselves to be active contributors to the learning journey. As such, active learning, collaborative learning, participation in challenging and authentic activities, formative communication with academic staff, establishing learning communities, and work-integrated learning are among the core strategies that have driven MCE course development since the advent of the development team and its attendant processes (Beer et al., 2010; Coates, 2010).

Tools for instructional success

Using the quality standards framework as a guideline, the development team then established a standardized development process that included the following:

- creating a project management tool for tracking development timelines;
- outlining and standardizing the core steps in the development process (i.e., onboarding, "kick-off" meeting, designing and planning, content development, learning management system (LMS) integration, quality assurance testing, and sign-off); and
- creating a complement of templates and resources associated with each step in the development process (i.e., content module page template, assignment templates, LMS course shell templates, and copyright and accessibility guidelines).

By formulating a consistent and detailed approach to course design and development, the teaching and learning experiences of MCE instructors and students could be both enhanced and somewhat standardized.

In addition to focusing on course development and implementation in collaboration with SMEs, there was also a need to support instructors during subsequent course delivery. Several touchpoints for instructors were thus established, foremost among which was designating a team member (initially a learning systems technologist [LST] and then a web course content developer [WCCD]) to coach, train, and host workshops for instructors on the use and application of the LMS and other educational technology tools. Two self-paced online courses were also developed for new instructors to complete prior to beginning their teaching; Avenue to Learn Training focuses on LMS functionalities and Instructional Strategies for Adult Learners focuses on best practices for teaching online in an adult education context. Further details about MCE's course development and delivery processes and policies can be found at the MCE Course Development Hub by exploring the Continuing Education Instructor Toolkit, the latter of which also highlights various SME and instructor resources that have been created and curated by the MCE development team.

Focusing on new and emerging pedagogies and technologies

The inclusion of innovative pedagogies and technologies also became a focal point for the course development team, especially when partnering with SMEs during the design and planning stages of course development. A set of approaches and instructional/technological strategies were, therefore, developed and implemented, as appropriate, throughout the process. These include, among others: a focus on curating (as opposed to solely creating) credible course content and materials; using open education resources (OERs) whenever possible; incorporating external learning tools (e.g., H5P, Echo360, EHR Go, Stukent Mimic Pro Software) where they might credibly enhance learning; embedding experiential learning projects (e.g., Riipen, which is discussed below); and using case studies, simulations, and other authentic assessments when and where appropriate. It is in this area that the expertise of instructional designers has been especially valuable for navigating the challenges involved in

productively blending pedagogy and technology in an online learning environment.

With this robust foundation in place, the MCE course development team was now well aligned with the university's online programming strategy, addressing areas of accessibility, experience-based learning, excellence in teaching, and flexible learning opportunities, while also promoting higher levels of student engagement (Office of Provost and Vice-President Academic, 2021). The subsequent experiences of the team have yielded some notable insights into the practices of contemporary higher education that we believe are of interest to teaching and learning professionals across this dynamic sector. It is to this discussion that the remainder of the chapter now turns, by way of charting the team's particular experiences navigating the disruptive challenges of the late 2010s and early 2020s.

AGILITY IN TURBULENT TIMES

Despite the relatively wide scope of its mandate, the MCE course development team was quite small at its inception, consisting of two IDs and one LST—a role that specialized in the technical aspects of the LMS. As the team matured and the course development process was implemented and continued to evolve, the need for additional personnel became clear. For the first several years, the development team saw multiple variations in roles and personnel before arriving at a stable model of four IDs and one WCCD, with the additional assistance of an all-purpose multimedia specialist (MMS). This model was born in response to the large volume of new programs and courses being developed, the need to continually improve and enhance existing courses, and the need for robust in-house course development and instructor support in addition to technical support with various learning technologies.

Under this model, the ID leads the development process, ensuring adherence to universal design for learning (UDL) principles (CAST, 2018) and following best practices for instructional design and digital pedagogy. They provide SMEs with support to develop learner-centered and engaging course content and activities. The WCCD supports the IDs, instructors, and other staff in the development, integration, delivery, and revision of courses and web content, while also providing expertise as needed on the LMS and other learning technologies. While the development team does not have a dedicated MMS, MCE's MMS supports the process by developing specialized multimedia, including podcasts, videos, and images, as needed. All roles work together to ensure the highest quality and accessibility standards are met in all courses and their associated materials, with a view to creating the best possible learner and instructor experience.

Responding and adapting to changing needs of learners

Perhaps the most accurate term to describe the development team's approach to implementing its course design philosophy is "agility"—a project management strategy that can be adapted to new conditions through collaboration, customization, and reconceptualization. This dynamic approach empowered MCE to be resilient in moments of retrenchment and crisis and forward-thinking in moments of uncertainty or stability. As a result, MCE programs and courses tend to be more sensitive to market fluctuations and industry demands. This approach

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also sees the rise of online learning not as an obstacle to be navigated, but as an opportunity to help higher education institutions overcome geographic limitations and other socioeconomic barriers to reach a broader audience. Furthermore, agile course design and implementation enables team members to involve more stakeholders and partners in the development process—a key element of remaining relevant in adult and professional education.

The strength of this approach is perhaps best illustrated by MCE's successful pivot to a fully virtual learning environment during the COVID-19 pandemic, as the effects of the disease and the measures instituted by public health authorities to prevent it from spreading reverberated throughout society. For MCE, the pandemic (and the resulting disruptions to daily life) posed several challenges: How would enrollment be affected? How would staff operate without access to office space? And, perhaps most importantly, how would the institution continue to provide high-quality learning to students who were registered in courses convened at the MCE campus in downtown Hamilton? Like other units within the larger McMaster ecosystem, MCE had to adjust both quickly and prudently.

The agile approach to program and course design and delivery enabled MCE to persevere during this period of intense disruption. Although the pandemic's impact was significant, the built-in nimbleness of the existing process allowed staff to respond to these unique challenges promptly and successfully. In particular, the development team created and implemented a new type of course model into MCE's learning environment: the virtual classroom (VC)—a custom blend of synchronous learning and asynchronous online course design. To accommodate this new course model, the team generated a series of new templates, evaluation structures, and delivery guidelines that effectively mirror the type of instruction students would receive in traditional face-to-face environments. Although learners were unable to be physically present in the classroom with their peers, instructors utilized these [resources](#), along with web-conferencing technologies and other tools, to effectively re-create best practices of in-class teaching.

Not only did this new model address the short-term necessity of transitioning to remote learning, but it also pointed to a new prospect for MCE to meet learners' needs more effectively. Indeed, technology plays a fundamental role in today's student experience, regardless of the context, and so it is vital to recognize the obstacles that inevitably emerge within a virtually mediated learning environment (Chen et al., 2010). In creating the VC option, the MCE development team sought to harness the strengths of the learning experience of in-person instruction by rethinking the pedagogical possibilities of the digital space in a way that ultimately makes learning more equitable and accessible. Thus, while the conversion from in-person to VCs was born out of necessity, it quickly became apparent that the modality should persist beyond the short-term exigencies of the pandemic and has since become a staple feature of many new programs. In short, MCE's agile approach positioned it quite well to effectively manage the downsides of the pandemic while using this as an opportunity to capitalize on new ventures in programming to further stimulate growth.

Instructor support

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The points made in the previous section are further illustrated in MCE's evolving instructor support strategies. When instructors teach in person, they typically develop their own course content and learning materials in a highly autonomous manner. The ongoing online shift at MCE has necessitated the development of a robust and ever-evolving infrastructure of instructor support related to teaching tools, course maintenance, and content delivery. Grounded in the latest research and supported by MCE's 2016 strategic plan—which identified the need to "establish resources to set instructors up for success" as a core action item (Centre for Continuing Education, 2016, p. 8)—this effort has proceeded in tandem with the ongoing evolution of the development team and process.

Recognizing that instructors require specialized information to successfully deliver most MCE courses, the development team created a set of detailed instructor guides that are included in all LMS course shells. These guides are updated on a continuing basis and provide step-by-step instructions on using various tools in the LMS and other applicable learning technologies, as well as custom resources for any course-specific tools or functions. While the instructor guides provide a solid foundation for support, these provisions are augmented by the WCCD, who is the primary contact for instructors seeking real-time and/or one-on-one assistance. This includes training, course shell preparation and maintenance, and overall technical support.

The onset of the pandemic and subsequent shift to fully online delivery and VCs (as discussed above), brought a need for even more robust support to ensure that MCE instructors retained the capacity to deliver programming to the same high standards. Support included creating and continuously updating a virtual classroom guide (within the Continuing Education Instructor Toolkit), which contains information on best practices for running live sessions, developing online course content, and administering assessments and exams online. This resource was initially supplemented by a variety of ad-hoc webinar offerings on topics related to online/virtual course design and delivery. In the first 3 months of the pandemic, nearly 500 faculty and staff from across the McMaster community (not limited to MCE) participated in these learning sessions, thus further helping bridge the gap created by the unique challenges of COVID-19.

To be sure, the centrality of instructor support to the development team's work highlights the unique requirements of the continuing education sector, which involves creating and delivering innovative online learning courses with an instructor pool that is typically not comprised of professional educators. However, these experiences also speak to the broader issue of ensuring consistently that high teaching and learning standards can persist in the face of unanticipated disruptions. By having in place a team of online learning experts who operate through an agile process, the instructor support mechanisms essential for maintaining learning continuity through the upheavals of a pandemic could more readily and effectively be developed and implemented.

EXPANDING MCE'S REACH THROUGH COLLABORATION

MCE has always sought to expand its reach within the McMaster community and

beyond to the wider world of post-secondary and adult education in Ontario and across Canada. In recent years, these initiatives have included significant involvement from the course development team and have played a major role in MCE's emergence as a hub of expertise in online learning and digital pedagogy. The purpose of these initiatives is to foster collaboration and build partnerships, enhance the position of MCE and continuing education more broadly within the higher education landscape, and access a variety of resources (financial, intellectual, and technological) that support the design and development of innovative online learning.

Continuing education has historically geared its programming toward a particular type of learner who is different from the typical undergraduate. Over time, however, distinctions between the various categories of higher education students have increasingly blurred, and interest in continuing education has significantly grown to include a wider variety of learners. As a result, MCE has expanded its programming to reach broader audiences and forged collaborative endeavours with other university units. Some of these include:

- a close partnership with the McMaster Faculty of Social Sciences to double the size of the existing MyOWN McMaster degree bridging program by adding a sociology pathway to the existing history option (the latter having previously been developed in collaboration with the Faculty of Humanities),
- a partnership between MCE and McMaster's world-renowned Faculty of Health Sciences to develop the Science of Cannabis program, and
- an online learning integration initiative with the Department of Anaesthesia.

In addition to these internal partnerships, MCE has established various external partnerships, including those with:

- Riipen (a comprehensive experiential learning platform) and its associated digital badge cloud service (CanCred Factory);
- Hoame Meditation Studio (Toronto) for the development of the Mindfulness in Modern Society certificate program;
- the Surety Association of Canada for the Associateship in Canadian Surety Bonding certificate program; and
- the Ontario Caregiver Organization, Healthcare Excellence Canada, and D2L Open Courses for the development of the Infection, Prevention, and Control of Caregivers and Families course.

The development team has also participated in several externally funded projects that help contribute to a climate of innovation in online teaching and learning in Ontario's higher education sector, financed by the provincial government's eCampusOntario initiative. For example, in response to the COVID-19 pandemic, the Government of Ontario (2020) announced that it was "investing $50 million in virtual learning and educational technologies to help expand access to high-quality, market-responsive, and globally competitive 'Ontario Made'

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education" (para. 1). Led by the development team, MCE pursued this funding in collaboration with a number of partners, ultimately securing nearly $400,000 to design and develop two self-paced online courses.

These partnerships are important because they provide access to an abundance of financial and professional resources, along with useful information about market incentives. The funds and resources obtained through these partnerships have enabled MCE not only to continuously improve, but also expand and enhance its programming offerings, thereby creating more opportunities to attract a wider diversity of learners. More abstractly, collaboration is a key component in the world of education, as it is crucial to fostering new knowledge and insights into emerging technologies, teaching and learning strategies, and best practices. The development team's pursuit of these partnerships thus allows MCE to grow as a unit through the sharing of knowledge while also contributing to the wider growth of continuing and post-secondary education across the province.

CONCLUDING POINTS AND FUTURE DIRECTIONS

This chapter's account of the advent, evolution, and successes of the MCE online course development team has been shared not merely to highlight the achievements of a particular McMaster teaching unit, but rather to share important insights about the nature of contemporary online learning that are applicable to all sectors of higher education. This is particularly the case given the ongoing divergence of the typical university student's profile from the full-time, on-campus residential late-teens/early-20s undergraduate of the popular imagination, as more students complete their education while working and/or raising families full-time (DeRuy, 2015; St. Amour, 2020).

Recalling the discussion in the introduction above, the evolution of online course development at MCE clarifies several points that are of broader relevance beyond the continuing education context. One such point is that the successful creation of quality online learning programming requires that an institution invest long-term in professional expertise. That is, while most faculty and instructors are undoubtedly dedicated educators, simply requiring them to "go online" without a core team of educational technology and digital pedagogy specialists in place to lead such transitions will make this process significantly more challenging for all involved. The creation of a course development team dedicated solely to this task has been instrumental to MCE's emergence as a leader in online teaching and learning at McMaster—to the extent that they were brought in to assist with the university-wide emergency transition to remote learning at the onset of the COVID-19 pandemic.

An additional point of note is that once such a team of experts is in place, the processes and roles through which it operates must remain flexible and thus quickly and easily adaptable to changing circumstances and needs—in other words, it must be agile. Indeed, the multiple changes to the MCE development team's composition and continuous updates to its workflow, processes, and resources according to shifting conditions have been crucial to MCE's successes in online learning since the mid-2010s. These experiences also make clear that while being rapidly responsive is key, learning from and further adapting based on the experiences of these

changes is also crucial. In other words, initially temporary solutions enacted in the name of agility can and should be made permanent when they work—as in the case of MCE's VC courses, whose popularity with students has led to their becoming an enduring feature of most programs, even post-pandemic. Conversely, those adaptations that do not ultimately meet a lasting need ought to be easily and promptly altered further (or even phased out) through a process of continuous improvement—as in the case of a short-lived digital learning specialist role on the MCE team, which was soon converted into an additional ID position as the institutional needs changed with the disruptions of COVID-19.

A final point relates to the potential advantages in the areas of collaboration and external funding afforded to an institution that creates an in-house group of online learning experts who can lead the applications for, and execution of, such projects at the cutting-edge of contemporary higher education. For instance, in addition to the initiatives noted in the previous section, at the time of writing, MCE is preparing to take advantage of the emerging surge of interest in micro-credentials and accompanying funding opportunities. Toward this end, the Ontario Government announced that it would be "expanding the Ontario Student Assistance Program (OSAP) to include nearly 600 micro-credential programs," supported by an investment of "$59.5 million over the next three years to further establish micro-credentials as a key component of Ontario's internally recognized postsecondary sector" (Government of Ontario, 2021, para. 1, 7). Led by the course development team, MCE will be actively engaging in programs and projects funded through this initiative, building on the established success in externally funded, collaborative initiatives discussed earlier in this chapter.

Not only will participating in such projects help secure valuable funds for the university while further strengthening McMaster's online teaching and learning footprint vis-à-vis competing post-secondary institutions, it will also help MCE better meet the ever-changing needs of its core base of learners, most of whom are working adults seeking to upgrade their employment qualifications—a group that includes many new Canadians across the Greater Hamilton Area and beyond. In this sense, while the COVID-19 pandemic posed significant challenges to all sectors of society—higher education very much included—it also afforded some historic opportunities for growth and innovation, as enrollment at MCE notably increased (McMaster University, 2020), with many students using the lockdowns as an opportunity to enhance their professional knowledge, skills, and credentials. Having a rigorously established yet adaptively agile online course and program development process firmly in place—anchored by a dedicated team of digital learning professionals—has thus helped ensure that MCE could take full advantage of these uniquely disruptive circumstances in such a way that benefits not only its own material and reputational interests, but also the wider communities that institutions of higher education ultimately serve.

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APPENDIX A: LIST OF ABBREVIATIONS

ABBREVIATION	MEANING
ID	Instructional designer
LMS	Learning management system
LST	Learning systems technologist
MMS	Multimedia specialist
OERs	Open education resources
SME	Subject matter expert
UDL	Universal design for learning
VC	Virtual classroom
WCCD	Web course content developer