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# Making do with what we have: using the built-in functions of a Learning Management System to implement UDL

## Introduction & Context

One of the great challenges in the increasingly rapid and systemic implementation of Universal Design for Learning (UDL) in higher education is currently the perception instructors have that the demands on their time are already too great for them to be able to attempt a redesign of their content, teaching methods and evaluation formats (Jordan Anstead, 2016). Many of the implementation initiatives in North America and Europe focus on the social justice objectives of UDL and on the inclusive outcomes these can lead to. The post-secondary sector, however, is currently in a situation of such flux, under neoliberal pressures, that instructors feel justified in objecting to change even though they may not be rejecting these inclusive goals per se (Clark, Moran, Skolnik & Trick, 2009). It becomes essential therefore for UDL advocates to acknowledge this reality, and to perhaps shift the UDL discourse on campuses from the conceptual social justice agenda to a more pragmatic, and logistic, discussion around time and resources.

This practice brief suggests that the best way to achieve this change is to focus on tools and strategies that align with UDL and are already part of instructors' reality. It is argued that it will then be possible to establish a constructive dialogue around hands-on strategies that are sustainable while not appearing burdensome to teaching staff. One such tool is the Learning Management System (LMS) that most campuses in the Global North have already purchased and integrated into campus life and administrative structure, also known in the UK under the term 'virtual learning environment (VLE)'.

(Bradley, Jadeski, Newton, Ritchie, Merrett, Bettger, 2013). This article will seek to highlight features that are contained in most LMSs that align with UDL principles and that allow for a quick and fairly effortless UDL integration in class. The LMS discussed in this paper is Moodle, but it is argued that many of the features discussed are present generically within most LMSs currently encountered in higher education, such as Canvas and Blackboard Collaborate.

## Methodological Reflection

The methodology used for this brief is auto-ethnography since the author draws here on his own experience and reflection regarding the usefulness of the three UDL principles when attempting to create inclusive classroom conditions within undergraduate and graduate courses (Trahar, 2009; Ellis, Adams & Bochner, 2010). The author's professional experience and trajectory are unusual and explain his keen interest in UDL within the higher education class. He has previously been a K-12 teacher working in the field of inclusion with students affected by social, emotional and behaviour difficulties (SEBD). Within this professional context he was relying heavily on UDL in his practice. He also, for the duration of this PhD, took on the position of unit manager within a Disability service provider on a large Canadian campus. During these four years, he was equally heavily involved in Disability Studies, and UDL again was a framework that provided support and clarity for much of his work. When first taking on a faculty position, applying UDL to the higher education classroom was very much a reflex. He has then become instrumental in advocating for UDL implementation with colleagues within his faculty.

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The data presented here briefly is phenomenological in nature and does not purport to quantify the satisfaction of student with the UDL strategies implemented. In this respect further research is required to evidence this angle. The phenomenological reflection of the author as an instructor, however, remains very pertinent as an indicator of the degree to which UDL implementation is able to reduce the tension felt by faculty within a climate of intense transformation of classroom culture and pedagogical shift.

The three UDL principles will be used as section headings below in order to roughly classify the observations the author made within his own practice on a Canadian campus, as well as the professional reflection he carried out through this time. Of course the UDL principles overlap in many ways and certain strategies and tools can be categorized under several of the UDL headings. It is used for convenience of presentation rather than as a strict and rigid classifying method.

## Findings

### Multiple Means of Representation

#### Posting Powerpoints (PPTS)

A wide variety of students may have difficulties taking notes during a class or lecture: second language learners, students with disabilities, students taking medication that affect focus and concentration, students with ADHD, etc. Posting the class PPTs on the LMS seamlessly allows learners to access the course content in a variety of ways and to go over their own notes in order to check their understanding and tackle weaknesses in their own understanding of the class content. There will always remain a debate as to the impact the posting of PPTs has on attendance and a UDL reflection allows instructors the relative freedom to adapt this strategy to their course in the way that best suits them. As long as the LMS is used in some way to offer quick and user friendly access to the PPT, UDL and design thinking are de facto embraced and multiple means of representation are offered.

#### Providing open access reading resources of various level of complexity

The LMS allows instructors to post open access reading resources with a varying level of complexity, which offers learners multiple angles of entry and access to the content. The author has learnt to systematically integrate in his Moodle posts for each topic covered two or three readings of various difficulty level which allows students to select the complexity that best suits their knowledge, understanding and ability.

#### Posting external audio visual materials that complement the course content

Lecture style delivery restricts the learner to two means of access to the content: auditory and written comprehension. LMS platforms now allow instructors to post video resources that complement the course content. Open access video resources widely shared on the Net are abundant and rich, and will not require the instructor to create their own material. The only task required to implement UDL in this way is simply a little bit of browsing. Collective Commons material is available in open source format and can be shared with students without copyright worries. There are also obviously numerous YouTube sources that will be able to complement most higher ed courses. Without necessarily shifting to a 'flipped classroom' model, something which on the other hand might well be very time consuming for a lecturer, the seamless integration of audio-visual material on the LMS allows for a modest but effective embedded form of differentiation. The only remaining concern from a UDL perspective is to make instructors aware of the need to select open access sources with captions rather than those not subtitled,

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and this in itself is a very simple reflection to develop through professional development.

#### Podcast and videos summarizing essential concepts

Moodle, and many LMSs in similar ways, allows instructors to add videos and podcasts with ease. These can be very helpful when offering students brief highlights or recaps of the key points of a lecture. Creating a YouTube channel, for example, allows instructors to add videos with ease on Moodle as external hypertext links. These short videos can summarize the main concepts or themes of the class and serve as a helpful addition to traditional style lecturing. Similarly many instructors will use short videos on the LMS platform to highlight assignment directives and ensure students have gained a full understanding of expectations, through various formats of messaging, before the begin the tasks. There remains the issue of captions, but YouTube captions are particularly easy for lecturers to add autonomously without relying on external expertise. Many campuses have added to their LMS itself videos explaining to instructors how to caption their own audio-visual creations (Canvas, 2018).

#### Glossary

Moodle possesses a glossary function, and this feature is available on most LMS platforms. This can represent a useful complimentary platform for the class where key concepts are presented to the student in an alternative format, one that is sometimes clearer for students than the lecture notes. The glossary can be created by the instructor, by the students or even by the instructor and students collaborating as a team as part of a class exercise.

#### Multiple Means of Action and Expression

Chatrooms and forums Moodle allows for the easy creation of chatrooms and forums where learners can exchange and dialogue. This offers students a radically different role from the passive listener stance they are traditionally limited to in lectures. Instructors report a widely different level of engagement on LMS forums than in class discussions (Mubarak, Rohde & Pakulski, 2009). Students with disabilities, but also second language learners or learners who are culturally diverse may find significant comfort at being offered an alternative way to engage, participate and contribute in class rather than be asked to raise their hand and take the floor.

#### Quizzes and polling

Moodle, like most LMSs, offers instructors the possibility to create forms, quizzes and polling tools with great ease directly on the platform itself. This is a form of engagement that is innovative for learners and allows them to express their opinion, check their understanding and enrich their mastery of the class content. What might have been time consuming when lecturers in the past relied on various external software and Apps to create these interactive tools, can now be produced at the click of a button within the LMS itself.

#### Accepting assignments in various formats

Moodle offers learners, not just instructors, the possibility of loading their own links. This, in turn, means that instructors have the opportunity to widen the format of submission for assessment: PPTs with voice over, videos, podcasts, and animations can all be loaded with ease and radically transform the learner's relationship to the assignment.

#### Live ongoing feedback on instruction

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Moodle offers instructors the possibility of creating feedback forums, or of posting links to anonymous Google Forums, where learners can provide live feedback on classes and course delivery. This has the potential to radically transform the teacher-student relationship by putting an end to the passive role learners too often have in higher ed classes. The feedback is live and instantaneous, and LMS platforms allow the use of these tools to remain anonymous.

#### Pre-submission of assignments and formative assessment

The conventional submission of assignments in paper format was stressful both for the student and the instructor. Students would often have to rush to a particular location to physically produce the paper version of their work by the specified deadline. Similarly instructors were showered with voluminous piles of paper submissions that would be hard to carry and manage. Paper format submission of assignments can now be eliminated; electronic submission through an LMS platform not only eliminates these difficulties but it also offers instructors and students ease and speed that allow for feedback of a richness and quality that have never before been imagined. Many instructors are now able to allow pre-submission, and to offer virtual feedback and guidance in real-time, which in turns means students are able to fine-tune and resubmit their work, having gained a better understanding of the expectations. This represents true formative assessment, a pedagogical strategy often talked about but rarely genuinely achieved.

### Multiple Means of Engagement

#### Curriculum co-creation opportunities

The forums and chatrooms that can be created on an LMS platform allow instructors to open a live, ongoing and truly reciprocal dialogue, which can transform itself rapidly into fully fledged curriculum co-creation (Chemi & Krogh, 2017). It can often be difficult to create winning conditions and the right climate for students to feel sufficiently comfortable in class to discuss their own expectations with regards to the course content. This climate is a lot easier to create virtually and Moodle serves a practical purpose in this respect.

Instructors traditionally invite guest speakers into their class. In the 21st century these guest appearances can be both more convenient and more fulfilling since we are no longer limited to local talent but offer the opportunity to bring speakers in virtually – through Skype or Collaborate. These virtual guest interactions can be recorded when they occur, at the click of a button, saved and archived as part of the course content on Moodle. Students can watch the segments over and over again, and as a result extract more from the guest appearances. In many ways the spatial limitations of the classroom have been eroded and the LMS platform serves as a gateway to this new global experience.

#### E-portfolios

Moodle allows students to post e-portfolios as hyperlinks with ease and convenience. They can thus be viewed by both peers and instructors; the ease with which e-portfolios can be shared virtually with peers on an LMS leads to the creation of a collaborative culture and to the tangible implementation of social constructivism in everyday classroom practices. This, in turn, allows for an integration of experiential learning and a hyperpersonalization of the course tasks never before possible.

#### Interdisciplinary approaches to the course content

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Moodle, because it is capable of offering instantaneous access to the students to their various courses, allows for a natural cross-disciplinary reflection which can easily translate into interdisciplinary exploration across courses: all it takes, technically, for a student to share the same resource in several of their courses is a few clicks of a key. Learners would traditionally have different binders, textbooks, etc. The LMS platforms have revolutionized this and now offer the learner an instantaneous, cross-course overview and interface. Instructors, once aware of the potential this represents, can encourage interdisciplinary reflection as part of the course experience and the LMS use.

## Discussion

LMS platforms, also known as virtual learning environments in some European countries, have revolutionized pedagogy within higher education. The explicit focus for their adoption and use has been to shift classroom practices towards active learning. Convenience for the lecturer is another argument which is being used to encourage their integration within faculties. This practice brief, however, has highlighted, through the phenomenological reflection of an instructor who uses the features of the LMS with accessibility in mind, the extent to which many of the built-in tools within these platforms align perfectly with the UDL principles. This is a monumental realization as it may well enable UDL advocates to succeed in encouraging faculty to explore UDL where they might otherwise have had little incentive to do so. The initial personal investment in terms of time, planning and redesign is oftentimes considerable when a lecturer first explores UDL. If the tools and strategies sought within a UDL reflection are available and ready for the picking on an LMS platform, lecturer buy-in suddenly becomes much more likely and attainable. This in turn simplifies the task of UDL advocates who otherwise might stall, in the current higher education landscape where cuts are increasing, workload expanding and time is scarce.

It is obvious that LMS platforms create their own inherent integration issues, as there is no doubt that technology in itself does create push back when instructors have fears or preconceptions around its use and potential (Matrosova Khalil, 2013). Technological integration however, despite this occasional resistance, benefits from wide faculty acceptance, administrative buy-in and institutional support on most campuses – unlike UDL. If UDL can succeed in presenting itself as aligned with tech integration and embedded in LMS development, it is likely to benefit from a natural momentum. This will also mean that the process of rolling out UDL across campuses can rely on resources beyond current natural allies such as Disability service providers, and can be embraced and carried out by other staff such as senior administration, tech support, instructional designers, teaching and learning units, etc.

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