

Inclusive Learning through Universal Design for Learning (UDL)

<https://bit.ly/cilt-udl>

Introduction

As lecturers teaching at a South African university, pursuing teaching practices that provide access to all students is of utmost importance. Equitable learning is the inclusive practice of ensuring that there are no barriers that prevent interaction with, or access to online teaching and learning content and activities. There are many frameworks and even tools that one can use to go about planning and making content accessible; one of such is Universal Design for Learning (UDL).

UDL is “a curriculum and instructional design framework based in neuroscientific research and [is] focused on how the brain recognises, processes, organises, evaluates and responds to varied types of information.” (Meyer, Rose, & Gordon, 2014). Based on scientific insights into how humans learn, the UDL framework can optimize teaching and learning for everyone. Some of the core beliefs of UDL is that variability is the norm, that variability is predictable, and that part of the educator’s job is to design for all students. By practicing UDL, our teaching styles can become more accessible to and inclusive of the diversity we have in our student groups regarding gender, religion, culture, age, race, physical location, mother tongue language, communication style, schooling background, physical and intellectual ability; digital literacy skills, bandwidth restrictions; socio-economic restrictions and so forth.

What are the benefits?

- Deep learning rather than surface learning
- Heightened/ optimised / meaningful learning experience
- Better response and involvement from students

How can you use it generally and in Vula?

The UDL framework acknowledges individual differences and preferences, which is why the framework encompasses a “multiple means” perspective on how teaching and learning content is engaged with, represented, and expressed. In order to make content accessible and meaningful to a wide range of diverse students, the UDL framework adopts three key principles to provide multiple means for students in terms of: (1) Engagement, (2) Representation and (3) Action and Expression.

Principle 1: Engagement

This principle is related to the affective process in the brain, where the “why” of learning is emphasised. By implementing this principle, students will be able to make connections with content in

terms of its importance and relevance so that they can be motivated or stimulated to learn. This principle can be implemented through providing a variety of topics for assignments and discussions that are of interest to students; contextualizing concepts through providing local and global examples; setting up activities in ways that students' voices (knowledge and experiences) are valued and wanted. Below is a table outlining teaching strategies that can be applied to provide students with multiple means of engagement as well as examples of how to do so.

Strategies to consider	How to apply generally	How to apply it in Vula
Include opportunities for students to use their own cultural norms and experiences in activities	Reflective assignments; personal assignments; phrasing of questions; case studies based on familiar norms and experiences	Reflective assignment topics and Forum discussion topics; Blog writing activities for students to explore how concepts apply in their contexts; case studies that include contexts familiar to students
Broaden examples to highlight applicability in a range of cultures and countries	Include local, national, and international readings (authors), variety of case studies, images, and videos; comparison graphs	Lessons Tool can link to further resources regarding local, national and international related content
Build in opportunities for students to give feedback of their level of understanding	Mentimeter; Cloud	Use the Comments tool with embedded content; include polls and checklists
Encourage peer support and feedback	Peer-based assignments; buddy or group systems where grouped students can check in on each other	Student WhatsApp group (without lecturer); peer responding on forum posts; questions in Q&A tool where peers can ask and respond to questions (including anonymous questions)
Include a variety of individual and group activities		For group activities, use the Section tool and allow students to choose own groups at times, along with randomly assigned groups

Principle 2: Representation

This principle is related to the recognition process in the brain, where students make sense of the 'what' of learning. By implementing this principle, students are enabled to make connections with content in terms of how it relates to their existing knowledge and understanding. It takes into account



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that students may interpret and comprehend content in different ways, and therefore emphasises the importance of the (same) content being offered in several formats.

Strategies to consider	How to apply generally	How to apply it in Vula
Point out important relationships and structures to help students make meaning and build cognitive connections between concepts	State learning outcomes before a lesson; include instructional text, headings, annotated text, and diagrams; course outline	Use the course overview tool; Explain how content works in the Vula site; Label files and folders in Resources folder; Lessons Tool - state LOs, use instructional text and headings; link to forums.
Chunk information into smaller sections to help students manage it more effectively	Include modules and parts	Use Lessons pages and subpages; organise and label folders and files in Resources
File format variety	Include multiple formats of the same file so that there is a text form and audio form always.	Request transcripts for lecture recordings; use captions for images; provide text summary to visual or audio files viceversa
Help students develop vocabulary	Bold important words; provide definitions to words; include resources to assist students with threshold concepts; hyperlink concepts (link to URL to learn more about that particular concept); create opportunities for students to apply vocabulary	Use hyperlinks; use rich-editor text to bold and italicise words
Be aware of and manage culturally-assumed knowledge, such as culturally-situated metaphors	When students use culturally-assumed knowledge respond kindly so that they may be aware of it; encourage authentic yet professional sharing; demonstrate how to respond via own responses	Model responses in Forums through replying.
Share study techniques and strategies that emphasize critical thinking skills over rote memorialization	Provide access to previous exam papers; use tutorials to practice how to answer case studies; include lower order and higher order questions; provide spaces for students to collaborate and share study notes with each other	Practice quizzes; Q and A Tool to serve as a forum for best study techniques



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Principle 3: Action and expression

This principle triggers the cognitive process in the brain, where the ‘**how**’ of learning is focused upon. This principle is about creating multiple opportunities so that a wide range of diverse students can have equal access to and a means to confidently express their learnings (summative or formative) and participate in educational activities.

UDL Teaching strategy	How to apply generally	How to apply it in Vula
Let students demonstrate their knowledge in multiple ways	Include a variety of tasks such as written, oral, practical, quiz, self-reflection; investigation; portfolio; research-based; etc.	Gradebook - Use a range of different grade-able Vula tools such as forums, student pages, tests and quizzes, blogs
Prompt students to stop and think about a key concept or to show and explain their understanding	Questions/ polls used with video, reading and other content	Use comment tool in lessons tool; Poll tool for quick checkpoints
Share checklists or guides for note-taking with students	Course overview outline; course infographic	Course overview tool; Short Lesson introductory videos; Learning outcomes template in Lesson tools; Checklist tool as end of Lessons;
Use real-world problems and authentic situations to make assignments meaningful to students	Include global topics and problems; include South African local data and examples; contextualise	Link global and local data and stats in Lessons Tool
Provide choice in how students can respond in tasks	Provide opportunities for oral, written, one-on-one and group based responses for tasks	In Forums model and allow for text, voice / audio responses; provide options for students to submit work in a variety of file types where applicable; allow ample time for submission
Provide a range of assessment types	Include a variety of assessment types such as written, oral, practical, quiz, self-reflection; investigation; portfolio; research-based; etc.	Gradebook - Use a range of different grade-able Vula tools such as forums, student pages, tests and quizzes, blogs



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How can UDL be used for particular files and tools?

Besides teaching strategies, the UDL framework can also be applied to particular files as well as pertaining to how certain tools are used:

- **Text documentation** - use fonts without decorative features (sans serif), font size (12 and above); colours, headings, add ALT text to images; save in PDF versions; use tables sparingly; number pages
- **Video** - keep length to about 8 - 15 minutes; provide transcripts; use subtitles
- **Audio** - keep to 10 - 15 minutes; provide transcript
- **Presentation slides** - provide explanation notes in text or audio; use fonts, colours and themes that are legible ; use bullet and numbered points; avoid cramming slides with too much information
- **Topics** - make contextually relevant; include a variety; use examples
- **Activities / interaction** - include multiple means to respond (voice notes and text); have spaces to reflect in [blog]; spaces for casual chatting (chatroom); spaces for peer sharing (forums); model how to respond

Basic online accessibility guidelines:

Below are some basic online accessibility guidelines which are helpful when developing online learning materials (adapted from [Blackboard Ally's accessibility checklist](#)).

- **Text font size** should be a minimum of 12px.
- Ensure that there is **sufficient contrast** between text and background (black text on yellow backgrounds works well for students with low vision).
- Ensure that proper **heading styles** are used (use the formatting provided in word processing programmes as these are usually accessibility compliant and will allow screen readers to recognise headings).
- Make sure you include an **alternative text description for images** that can convey the full meaning of the image (i.e. for an Early Childhood Development lecture on the role of play don't just say 'picture of child'; explain why there is a picture of a child --for example: picture of a preschool child playing with lego).
- **Don't use tables for text layout** - only use tables for data that needs to be displayed in a table form. Otherwise screen readers will not be able to read the text appropriately for the student.
- Ensure that all tables have **column headings**.



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- When creating lists - make use of the word processing **built-in list formatting** so that it can be interpreted by screen-reader software.
- When using hyperlinks in text, create a **short text description of the link target**.
- When creating a powerpoint presentation, **use one of the given templates** (don't create your own style) - also for screen reader compatibility
- **Don't use PDF or scanned document** formats - these cannot be read by screen readers (they are often interpreted as a single image).
- Video lectures should also have **subtitles** for those who have impaired hearing. Subtitling/ captioning also benefits students whose home language is different to the mode of instruction.
- **Text transcripts** of the video lectures serve the same purpose and can also benefit students with limited internet connectivity. Text transcripts can be created by editing the script you wrote for the lecture; or by using transcription services or software.

Extra resources

- Why Accessibility Matters: <https://www.youtube.com/watch?v=ee7eN8PMjKg>
- Universal Design for Learning series: <https://www.youtube.com/playlist?list=PLEVdYHEH5JvMbG5R32VRYtKJIRhWoui4g>
- Communication Accessibility: <https://drive.google.com/file/d/1qEp87R2sRXICtNIP38Hm88qPVS5AwMyC/view>
- General accessibility checklist (see page 4): https://help.blackboard.com/sites/default/files/documents/2018-08/AdoptionToolkit_Canvas.pdf
- Extensive UDL checklist: <https://wvde.state.wv.us/osp/UDL/7.%20UDL%20Guidelines%20Checklist.pdf>

