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## 11–15 SEPTEMBER 2022
## Warsaw, Poland

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# Blended Learning Technology and Infrastructure

**Assoc Prof. Mohsen Kalantari (Australia)** University of New South Wales, Vice Chair FIG Commission 2 (2019-2022)

**Dr. David Mitchell (Australia)** Chair of FIG Commission 2 (2019-2022)

**Dr. Dimo Todorovski (Netherlands)** FIG Chair Elect Commission 2 Professional Education

**TS03A: Blended Learning for Surveying Education**

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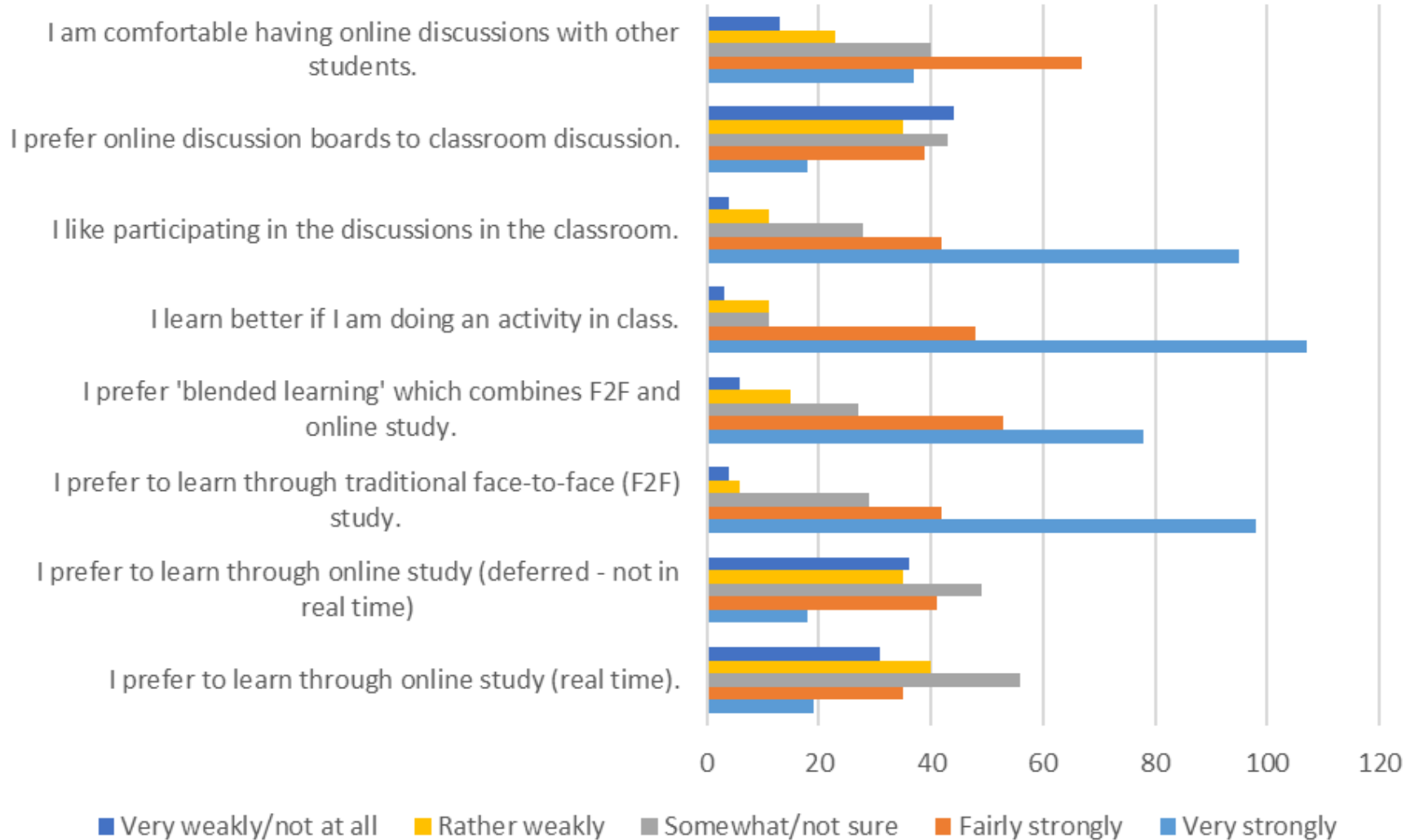Geospatial excellence
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# Topics covered

- Student preferences – online discussion, active learning, etc.
- Student preferences – formal and informal online learning platforms
- Technology for Surveying Teaching and Learning
- The Learning Management System, a fundamental for blended learning
- Informal online learning tools used
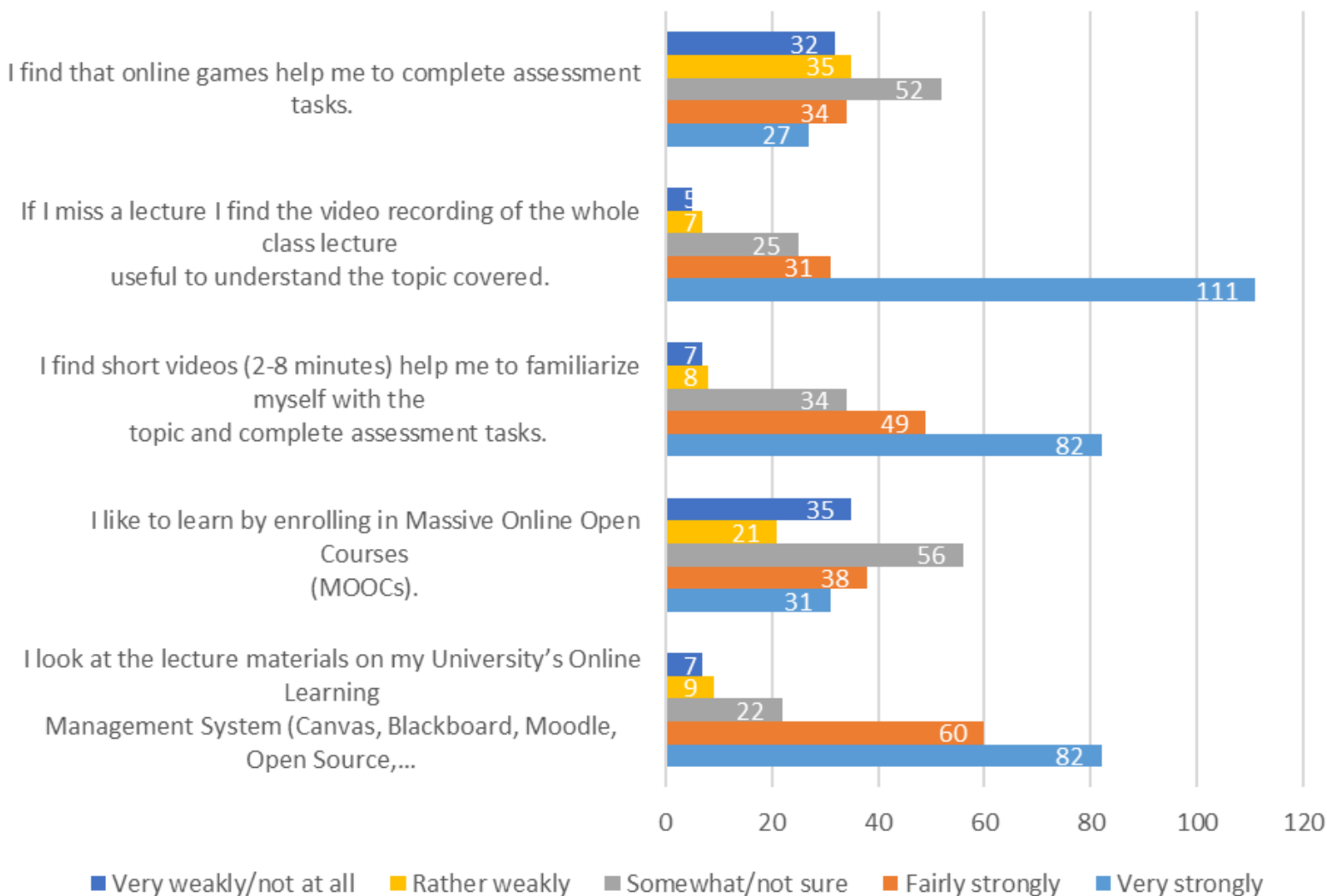- Case studies
- Concluding comments

Student preferences – online discussion, active learning, etc

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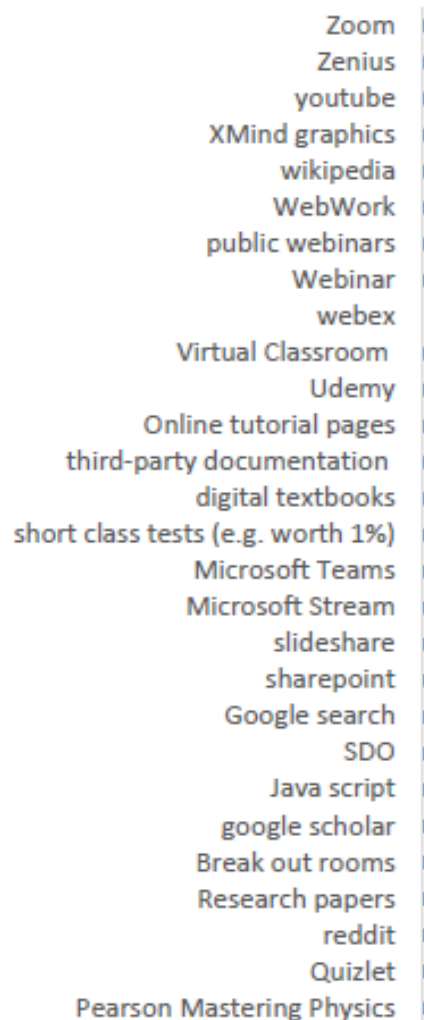Geospatial excellence
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# Technology for Blended Learning in Surveying (lessons learned)

- Technology should enhance learning and achieve learning outcomes and not just be used for its own sake.

- It is good practice to issue guidance on expectations regarding communication etiquette of online environments.

- Both students and staff vary in their digital literacies. For equity, diversity and inclusion, it is critical to minimise the need for fast internet connections.

- It is essential that not all 'computer work' is scheduled to be performed away from campus as high-powered PC activities are a cost barrier to blended learning.

- Another issue is software licences – Suppliers were very flexible during the COVID-19 pandemic but this may not continue over the longer term.

- Some cohorts of students will need more support.

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# The Learning Management System, a fundamental for blended learning
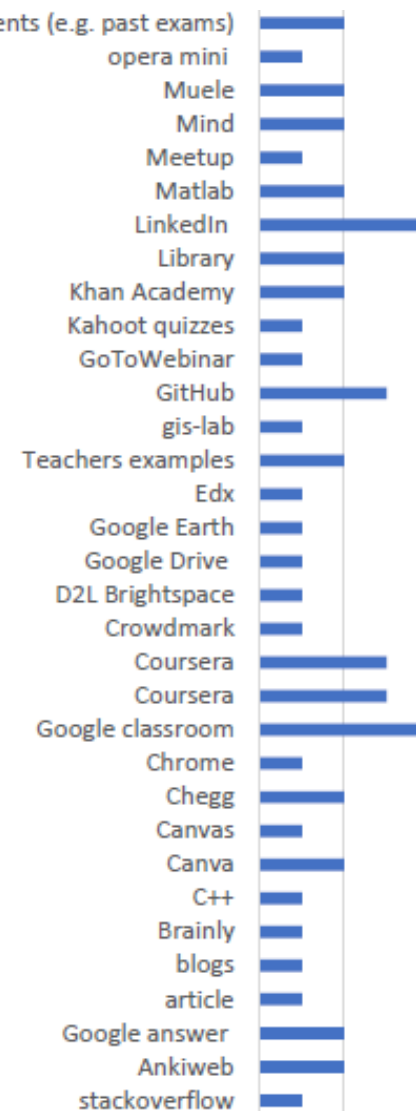
- Learning Management Systems focus on informational, person-related, communication, didactic and assessment aspects of education and training in blended learning.

- They are always available, provide course structures (e.g. classes, working groups) and are available on browsers or devices. They can contain static teaching/learning content, as well as interaction among learners and with teachers.

- The installation and the operation of LMS usually require extensive hardware resources and information technology skills, not to mention a dedicated support team.

- Access to LMS is essential for access to course materials and assessment tasks. This means students must have reliable internet access. For some learners, phone access may be the only option.

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# Case Study: University of West Indies

- For the UWI (a regional university across many islands) collaboration and communication is a challenge. Even though Blackboard Collaborate and Microsoft Teams were available, many people became more familiar with Zoom software for interaction and collaboration.

- While teaching went online during the pandemic, there were many technology challenges.

- Many learners had low connectivity or inadequate devices and were disadvantaged in accessing classes at home. Some learners could not cope and took leave of absence.

- arrangements had to be made to allow learners to access UWI's satellite offices in other islands and borrow the use of devices to connect for classes. Learners had already developed WhatsApp groups for connection, and now the use of this software has grown to more of a necessity than an addition.

- Some learners had to access UWI's satellite offices in other islands and borrow the use of devices to connect for classes.

- Learners developed WhatsApp groups for connection, and use of this software has become a necessity.

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# Case Study: University of West Indies

- Defending the integrity of online examinations to programme accreditation bodies became problematic. Early results showed some inflation in grades.

- Stricter rules for quizzes such as random selection of questions from large question banks and scrambling of responses were used to deter cheating. Greater use of similarity testing software to deter plagiarism and collaboration was implemented.

- UWI has returned to face-to-face teaching. Based on lessons from the remote teaching and learning, they are converting more courses into well-structured blended or online delivered offerings. Hybrid flexible modalities are also being considered but may require reconfiguring classrooms with expensive technology that may not be possible in the current post pandemic economy.

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# Case Study: University of Melbourne

- LMS, video recording and tools for online teaching and learning existed but not used to potential before COVID.

- During lockdown synchronous online teaching was the main replacement for the lectures, some pre-recorded. Virtual computer labs were often scheduled. Examinations were conducted online, including multiple-choice questions, extended answer questions or oral exams.

- After lockdowns some teaching and learning activities were offered in a synchronous blended mode. However, the subjects requiring fieldwork continue the conventional teaching approach.

- Based on this experience, which positive feedback, the spatial engineering faculty plan to offer its degree in a dual (blended) mode.

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# Concluding comments

- From an infrastructure perspective, moving to blended learning assumes that learners have the necessary bandwidth, available data, suitable devices, and learning spaces to access online content. These assumptions are not necessarily easily met. Hence, online lesson content needs to be low impact and provide alternatives for learners who may not be able to connect online.

- It is also essential to consider what happens when a learner's device no longer works. Including the example of a learner who spilled a soft drink on his laptop, possessed no insurance and could not afford repairs. Another learner's laptop charger became damaged. Living far from any urban area meant waiting several weeks before making a trip to the city to buy another charger. Both learners could not access online lessons until the problem could be resolved.

- Besides the infrastructure requirements, there are other critical lessons. The LMS must support mental well-being, support existing hardware, connectivity and other issues outside of the learner's control.

- Low-bandwidth materials, non-synchronous teaching, and flexible options in accessing materials must be considered.

# Thankyou!