Disaster Resilience in Higher Education Systems via a Cloud University Model

WORK PACKAGE 3

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Basic project information

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This report analyses the implementation of cloud university practices across 16 leading universities worldwide. The institutions analysed are geographically diverse, representing Europe (9 universities), North America (4), Asia (2), Australia (2), and the Middle East (1, Israel).

Main part

Out of the 16 universities analysed, 13 employ a combination of at least three learning formats (full-time, part-time, hybrid, or fully online): full-time is used in 15 universities, part-time in 14, hybrid in 11, and fully online in 10. These figures indicate a clear trend towards maximum flexibility, especially considering the needs of students who work while studying or are located in different countries.

The universities examined were founded in different historical periods: the oldest include Lviv Polytechnic (1816) and McGill University (1821), while the newest is Kiron Open Higher Education (2015), which focuses on online learning for refugees and migrants. However, both traditional and newer institutions are adapting to the digital age by implementing various learning formats.

The most commonly used cloud platforms among the universities are Microsoft 365 (used by 9 universities), Google Cloud Platform (6 universities), and AWS (Amazon Web Services – 5 universities). Some universities have developed their own platforms, such as UTokyo Azure (University of Tokyo), Melbourne Research Cloud (University of Melbourne), and SysEleven (Kiron Open Higher Education).

Most institutions opt for a hybrid use of multiple cloud services. Proprietary platforms are exceptions and signal a mature digital infrastructure.

The most widely used Learning Management Systems (LMS) include Moodle, Canvas, and custom solutions (Moodle is used by 6 universities, Canvas by 5).

Security policies are publicly available in 8 universities. Institutions in Singapore, Japan, Australia, and the USA provide the most detailed information, referencing national and international standards such as Red Hat Baseline, Gramm-Leach-Bliley Act, and SAP Security Standards.

Countries with a strong digital culture tend to have higher levels of transparency and specificity regarding cybersecurity.

All universities analysed combine asynchronous, synchronous, and interactive learning methods. Asynchronous learning is present in all 16 institutions. Synchronous interaction is facilitated through platforms such as Zoom, Teams, VLEs, or MOOCs. Universities in

Australia, Singapore, the USA, and Canada incorporate simulations, gamification, and "bring your own device" models. The emphasis is clearly on multimodal learning, combining the efficiency of distance technologies with real-time interaction. Instructional design plays a crucial role.

Common forms of student support include forums, online consultations, and mentorship programs. The universities of Melbourne, Sydney, and Tokyo offer highly personalized and interactive models with individual feedback, gamification, and case-based approaches. Universities with MOOC platforms (Kiron, UTokyo, Arizona State) integrate mass content with personalized recommendations and access to mentors.

The most extensive program portfolios are offered by The Open University (UK), Universitat Oberta de Catalunya (Spain), University of Sydney, and Arizona State University (USA) - ranging from undergraduate degrees to micro-credentials across all disciplines. Specialized education tracks are provided by Kiron (Germany) with a focus on digital skills, FernUniversität in Hagen (humanities, law, economics), and Ukrainian national universities (technical and engineering fields).

Universities are highly focused on building trust and legitimacy for their programs. Most have strong accreditations: Open University (UK), University of Melbourne, and University of Sydney are accredited by AACSB, EQUIS, and Australia’s TEQSA. McGill University (Canada), the National University of Singapore (NUS), and the University of Tokyo operate under government licenses and collaborate with leading international partners. Institutions focused on non-formal education, such as Kiron, do not have formal accreditation but deliver education through partnerships with recognized universities.

Universities demonstrate strong openness to students from various regions: flexible access to courses is available regardless of country of residence. Language diversity is a key factor in accessibility: many European and Asian universities, including Kiron, McGill, UNED, and UOC offer courses in English and local languages. Global access is ensured by most platforms, although some, such as Universidade Aberta, focus primarily on Portuguese-speaking countries.

Universities implement a variety of financial models tailored to different student needs. Kiron offers free education; the Open University of Israel provides partial refunds. Flexible payment systems are used by UOC, Open University UK, and Universidade Aberta, either modular or staged payments. US and Australian universities mainly operate on a per-course or per-credit basis. Many institutions have well-developed scholarship programs, especially NUS, the

University of Tokyo, and American universities. UNED and Universidade Aberta offer discounts and social benefits.

The most structured student support systems are provided by the Open University UK, University of Melbourne, and University of Sydney, including mentorship, IT support, disability services, and career counselling. UOC stands out with an active alumni community, while NTUU "KPI" supports students through a Student Consolidation Center. In the context of digital education, online support is crucial: Kiron, Drexel University, and Arizona State University provide online counselling, forums, and digital mentorship.

Collaboration with international partners is another key indicator of university performance. The University of Sydney, University of Melbourne, McGill, UOC, UNED, and Universidade Aberta are members of strong educational networks such as Go8, U21, EDEN, and EUA. Ukrainian universities are also highly active in the international education arena, participating in programs like Erasmus+, CEENQA, and ABET.

Conclusions

More advanced digital infrastructure allows for greater flexibility in learning formats, including a combination of full-time, part-time, hybrid, and fully online options. Learning flexibility is supported by the use of cloud platforms, synchronous and asynchronous formats, and LMS tools.

In countries with developed digital cultures (USA, Singapore, Japan, Australia), there is greater transparency and detail in security policies. A university's digital maturity influences the openness of its policies and compliance with international standards.

Historically traditional universities, as well as newer online-oriented institutions, are implementing digital learning formats (asynchronous, simulations, gamification). Membership in international education networks and accreditation bodies increases trust in programs and ensures the quality of online education.

Universities with proprietary cloud platforms exhibit mature digital strategies (e.g., UTokyo, Melbourne). Those using hybrid cloud platforms like Microsoft 365, Google Cloud, and AWS are focused on scalability and flexibility. A high degree of individualization, gamification, and mentoring (e.g., Melbourne, Tokyo, Arizona State) depends on the integration of cloud technologies and instructional design.