



DIVERSASIA

Embracing diversity in ASIA
through the adoption of
Inclusive Open Practices

618615-EPP-1-2020-1-UKEPPKA2-CBHEJP

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Duration: 36 months



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**NOTTINGHAM
TRENT UNIVERSITY**



Project partners



Jahangirnagar University
জাহাঙ্গীরনগর বিশ্ববিদ্যালয়



VIT
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)



IIT Bhubaneswar
Indian Institute of Technology Bhubaneswar



**UNIVERSITY
OF LATVIA**



Phoenix KM SoftQNR

Main aims:

- To ensure students with disabilities can enjoy the same access to Higher Education (HE) as their peers and enjoy access to digital training materials including OERs - Open Educational Resources and MOOCs - Massive Open Online Courses.

Objectives:

- Build capabilities and resources of Indian and Bangladeshi Higher Education Institutions (HEIs) to include a diversity of students, especially those with learning disabilities.
- Provide inclusive education training and tools to HEI staff, including guidelines, checklists and leading edge practices by following Universal Design for Learning (UDL) guidelines and principles.
- Provide a Validation Guidelines Toolkit that assesses the current level of accessibility of OERs and MOOCs in India and Bangladesh.
- Ensure awareness and uptake of accessible OERs and MOOCs by HEIs in partner country networks.

The following products are being developed:

- **DiversAsia handbook** which suggest strategies that overcome the issues of inclusion, diversity and cultural differences in Higher Education Institutions in Asia.
- **Innovative Toolkit with guidelines, checklists, and best practices** to implement Universal Design for Learning.
- **Innovative Assessment and Validation Strategy for OERs (SCORM) and MOOCs** to review and assess their level of accessibility and to enable further revision to enable greater accessibility.
- **Engagement App** - to monitor student engagement in real-time using device camera data and Artificial Intelligence models.



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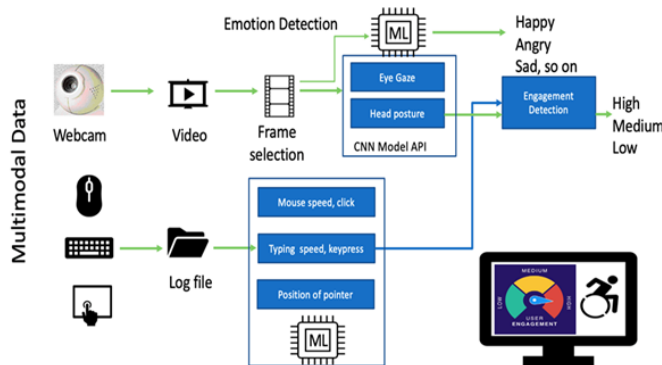
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DiversAsia Engagement Application:

- This tool uses the devices present in a standard laptop (web cam, keyboard and mouse) to assess the engagement of the user seated in front of the device. A USB web camera is used where such a device is not present.
- Past research has shown that engagement is the single most important factor in the education of students with a learning disability and autism – without engagement there is no deep learning or meaningful outcome.
- Teachers commonly use the 'Engagement Profile and Scale' (developed by Carpenter *et al.*, 2016) to measure engagement in the classroom.
- Our aim is to automate the measurement of engagement building on approaches used in two previous EU Projects: the EU H2020 MaTHiSiS project and the EU Erasmus Pathway+ project.
- Building on this previous experience, DiversAsia will use Explainable Multimodal Machine Learning for Engagement Analysis by fusing camera data with interaction data to obtain the learner engagement as a traffic light system (i.e., high, medium and low).

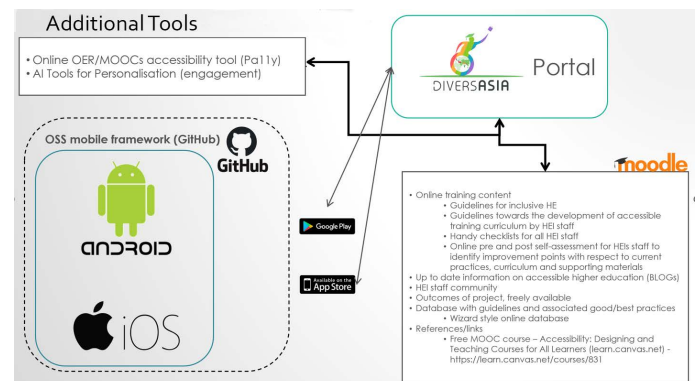


DiversAsia Best Practices Database:

- Best practices in accessible provision and policy have been collected across all consortium countries and beyond. These have been collated into a searchable, sortable database available from the project website at <https://diversasia-accessible-he.eu/elearning/mod/data/view.php?id=12>

DiversAsia Portal:

- The accessible portal at <https://diversasia-accessible-he.eu/elearning/> will contain:
 - Diversasia toolkit with information on accessible HE content, enriched with video, images, and applying interactive rich HTML5 content and applications.
 - HEI staff community - Moodle platform offers community functionalities.
 - Outcomes of project, freely available.
 - The DiversAsia best practices database and added MyHUB database.



Native Mobile Apps for iOS and Android:

- The Moodle mobile framework (<https://github.com/moodlehq/moodleapp>), has been customised to accommodate the needs of the DiversAsia portal, and resulted in a native mobile iOS and Android app, which, using secure webservices, is synchronised with the online portal. The advantage is that any content update of these two mobile applications can be performed via the WYSIWYG text editor functionality of Moodle, thus ensuring no developer or designer is needed when content needs updating.
- The apps are available via the App Store (iOS) and Google Play (Android). Use the search term "diversasia" to locate them.

Integrated SCORM Accessibility Validator Pa11y:

- An accessibility validator has been created integrating the Pa11y (<https://pa11y.org/>) open-source tool for SCORM packages. Pa11y includes and implements standards from the two checkers 'aXe' and 'HTML CodeSniffer'.
- The latter is run as default, but axe-core is additionally available in settings. The system checks for the three conformance levels of the Web Content Accessibility Guidelines (WCAG) 2.1, and the web-related components of the U.S. "Section 508" legislation.