

Major Incidents and Online Assessments

Following a Moodle Major Incident affecting submission of online assignments in November 2015, this paper gives a summary of the incident impact and response along with recommendations for preventing and managing future incidents.

The issue was discussed at Learning Environment Committee in the wider context of risks to Moodle and Turnitin and two recommendations were made requiring Education and Student Committee approval.

Recommended action

Education & Student Committee is asked to:

- (i) **review** the LEaD Moodle Major Incidents Report
- (ii) **approve** the Learning Environment Committee recommendations

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Major Incidents and Online Assessment

Purpose

The purpose of this paper is to raise awareness of the Moodle Major Incident occurring in November 2015 and put into place recommendations that will improve our response and management of future incidents affecting use of Moodle and Turnitin.

Background

A Moodle Major Incident occurred at the end of November 2015 which had a significant impact on student assignment submissions. Learning Enhancement and Development (LEaD) and Education Research and Enterprise Services (ERES) worked together to implement solutions and minimise the disruption caused by the incident. The attached LEaD report summarises the issue, impact, action taken and communication related to the incident. It also makes a number of recommendations which are currently being progressed. Information Services (IS) have also made a number of changes designed to increase incident prevention and resilience.

This Major Incident was discussed at January's Learning Environment Committee (LEC). While the University is able to take action to guard against incidents it is not possible to remove the risk to University systems and networks entirely. For example, the risk of a Distributed Denial of Service (DDOS) attack. Moodle is now relied upon by the majority of University modules to access course content and submit assignments. Consequently, it is important to review our processes in the event of a Major Incident affecting the use of Moodle and Turnitin within this context.

The LEC discussion focused on assignment hand in times and dates as well as the communication process around incidents.

At present the University does not offer a 24/7 service which means that students experiencing technical problems with assignment submission outside of core hours cannot access immediate help. Furthermore, the module team including course officers and/or academic staff are responsible for editing assignment settings and may not be available outside of core hours. It was recognised that there may be pedagogic reasons to set course assignment deadlines outside of core hours but that staff should be reminded of the limited support available for students who experience problems in this scenario.

During the Major Incident, while LEaD and IS managed the process and communicated with schools, in some instances local fixes were also put into place which caused some confusion and duplication of effort. As processes and communication are often handled differently in each of the schools, and also sometimes programmes, there can be problems in responding quickly and effectively to incidents. Consequently, a clear process for responding to incidents and a network of key school contacts is needed.

Recommended Action

Education & Student Committee is asked to:

- (i) **approve** these Learning Environment Committee recommendations
 - 1) Staff are reminded to consider this LEaD guidance when setting up assignments:
When setting your assignment deadlines, be aware of the support that students might require to submit an assignment online. If you set an assignment deadline over the weekend, educational technology support is not available and the module team will not be available to correct any errors in the assignment set up. This can prevent students from submitting their assignments successfully.
 - 2) Operations Board are asked to table a discussion to set up a communications process and network to respond in the event of a Major Incident affecting Moodle or Turnitin and manage related Moodle administrative issues. This process and network would work in partnership with IS and LEaD.

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LEaD Moodle Major Incident Report

This paper is for information only. An IS Major Incident Report which contains more of the technical detail is available on request.

Issue

The file storage for Moodle failed between 11:29pm on Friday 27th November and 9:14am on Monday 30th November. Back-ups were not running over the weekend, which meant that files uploaded to Moodle over the weekend could not be restored.¹ The biggest pool of files affected were student assignment submissions, but any staff file uploads were impacted as well.

Education Research and Enterprise Services (ERES) and Learning Enhancement and Development (LEaD) were only alerted to the issue by a number of ServiceNow queries from staff on the afternoon of Monday 30th November. It is unclear when the issue was first noticed by other teams within Information Services.

On Monday 30th November 5:51pm, Information Services reported the major incident and impact via an email communication composed by LEaD and ERES, to the all staff and all student lists.

Impact

- Files uploaded by students as submissions to Moodle assignments, Peer Assessment activity and file links in the offline Moodle assignment were irrecoverable.
- Irrecoverable student submissions led to academics not being able to download and mark student assignments with a knock-on impact on feedback turn-around times.
- Files uploaded by staff as assignment feedback, attachments to Forums and quickmail, module files, files attached to Quiz questions and assignment instruction files were irrecoverable.
- In the Information Services initial communication it was reported that submissions uploaded to the Turnitin activity were also impacted, but by 2nd December, it was found that these files were accessible via Moodle and had not been impacted.
- In the Information Services initial communication it was reported that students with deadlines in the future should edit their assignment in order to resubmit. It became clear by Tuesday pm that this wasn't working and an alternative solution was required.

¹ The lack of backups was not related to the file storage problem. Backups had not been taking place over weekends for an unconfirmed length of time. Information Services have confirmed that the Moodle backup is now being completed seven days a week and that this will be the case moving forward.

Information Gathering

ERES ran reports on Moodle to produce a spreadsheet of impacted files, users, modules and assignments. This was completed by the afternoon of Wednesday 2nd December.

Assignment fix

The incident impacted all assignments submitted to Moodle during the incident period, whether deadlines were in the past or future. While the student submission files were not available, a broken link to the files existed in the student submission areas on Moodle. Despite appearances, students could not use this link to edit their assignment even if they were granted an extension, or the deadline for the assignment was at a future date.

To resolve the broken file link students needed to be granted another attempt to submit to the Moodle assignment and an extension. For Moodle assignments where deadlines were in the past or due by Friday 4th December at 5pm, an extension was granted until Monday 7th December at 5pm. The extension only applied to students who submitted over the impacted weekend and by the original deadline.

Eight staff in LEaD and two from ERES worked on granting students another submission attempt and granting extensions on Thursday 3rd December. This required editing assignment activity settings and granting attempts and extensions at an individual student level. Lecturers enrolled on modules impacted were emailed with information on changes that were made to assignments and the list of students impacted. All students who had submitted to deadline were emailed with information on how to [resubmit](#). Another staff member from ERES worked on removing broken module file links to enable staff to re-upload files to modules.

The broken link to the assignment in the student submission area caused ongoing problems as students selected the option to ‘**Add a new attempt based on previous submission**’. This option re-created the link to the broken assignment submission file and prevented any further editing of the assignment. Staff from LEaD and ERES worked on 4th December and over the weekend of 5th and 6th December to grant students who had re-added the broken link to their assignment another attempt to resubmit.

In total, LEaD staff spent approximately 88 hours working on communication, attending meetings and implementing a fix around this major incident.

Ongoing concerns

At the time there were continuing issues that students experienced in adding a new assignment attempt may lead to requests for further extensions. In the Information Services final communication on the major incident on Monday 7th December, academic staff were advised to contact the IT Service Desk if they needed further extensions set up on assignments. Any further extensions would have had a knock-on impact on feedback turn-around times. LEaD communicated with Student and Academic Services throughout this period on this matter.

Local fixes

As staff in ERES were producing reports on the institutional impact of the Moodle data loss, many programmes implemented local fixes. These included:

- asking students to email assignments,
- adding alternative submission areas to modules,
- setting up of individual extensions² for students,
- in a few cases, academic staff had logged in to Moodle prior to 9:14am on Monday 30th November and were able to download the assignment submissions.

The mix of local and institutional fixes made it difficult to communicate a coherent message to students. Many students received emails from their programmes and from Information Services with conflicting information about how to submit and the extended deadline. As a result, many students were confused as to the best course of action.

Communications

As well as communications sent via all staff and all student email lists, LEaD and ERES communicated with ADEs and School Heads of Academic Services on 1st, 2nd & 3rd December.

Recommendations

- If a Moodle incident is identified it needs to be communicated by Information Services ASAP to the Moodle Service Manager in ERES and to LEaD via the Heads of Educational Technology and Blended Learning Theme Lead, so that they can assess likely impact.
- Ensure that backups of Moodle are run seven days a week. We have been assured by Information Services that this is now in place.
- Programmes should reconsider setting deadlines over the weekend. There is no educational technology support available for staff and students from 5pm on a Friday to 9am on a Monday.
- We would like the Business Continuity Committee to look at a more co-ordinated University-wide process for dealing with assignment submissions in the event of a major IT failure. This would ensure that we could adopt a consistent and transparent communication strategy with students impacted.

² Individual extensions did not enable students to resubmit and the attempt had to be reopened for students.