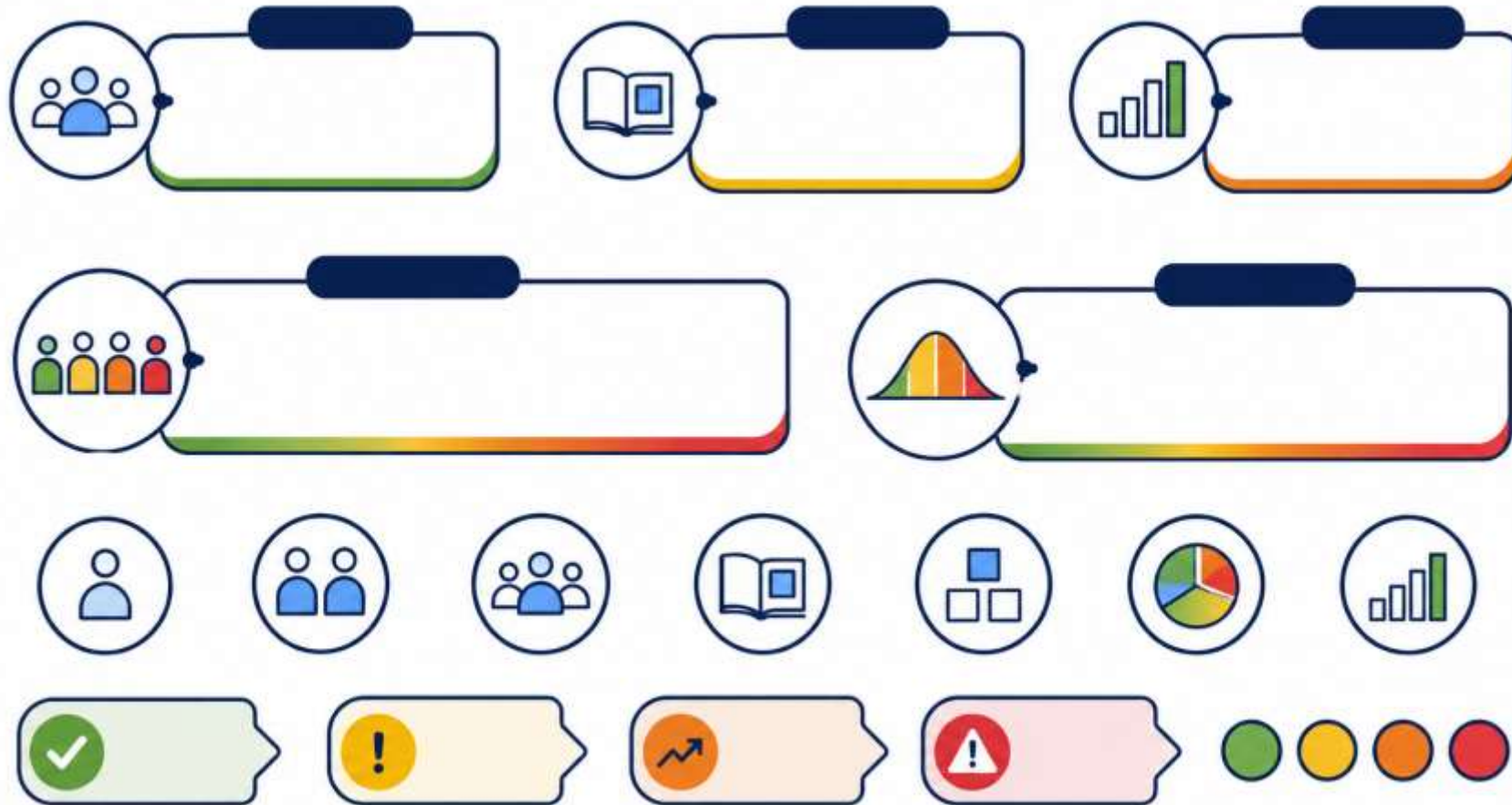


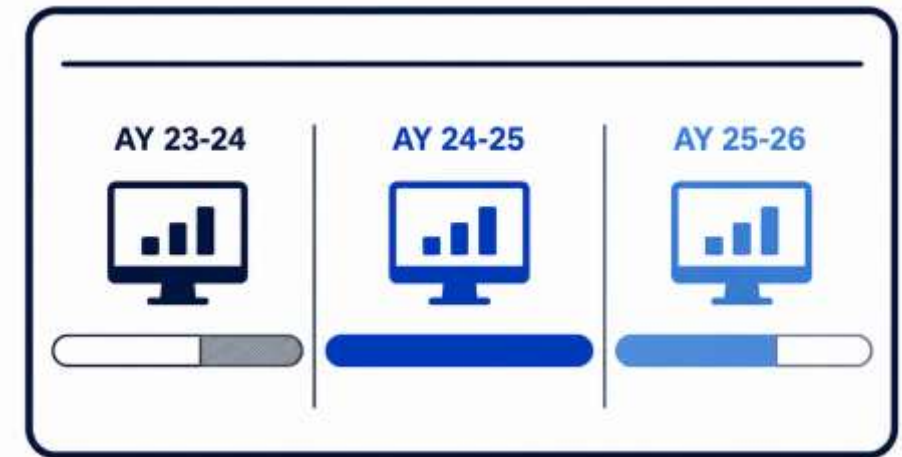
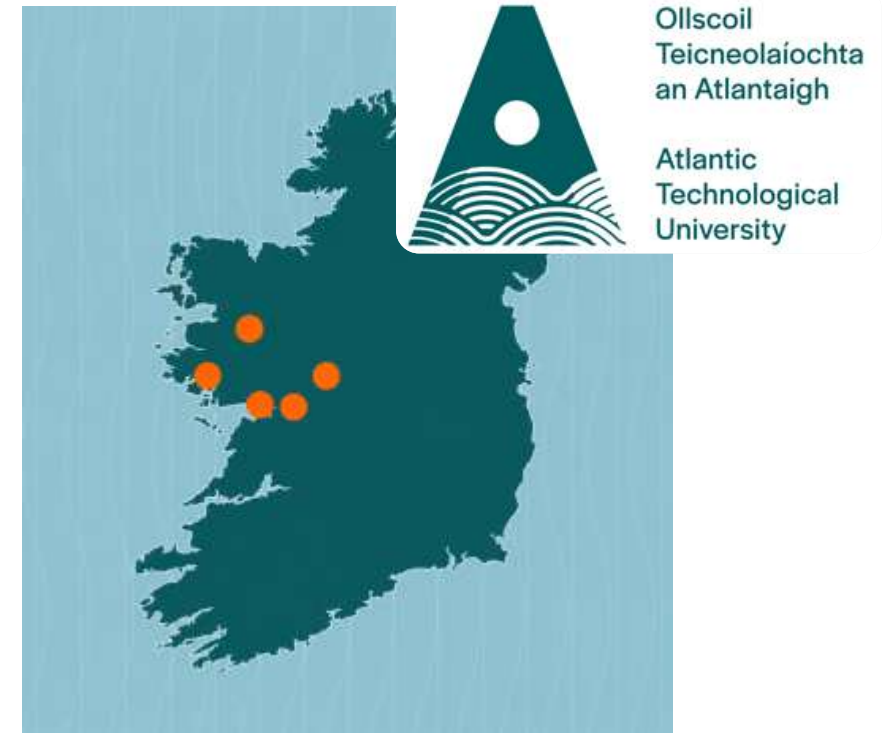
# Our VLE in Numbers



Dr. Cormac Quigley, Dr. Etain Kiely, Esteban Moreno



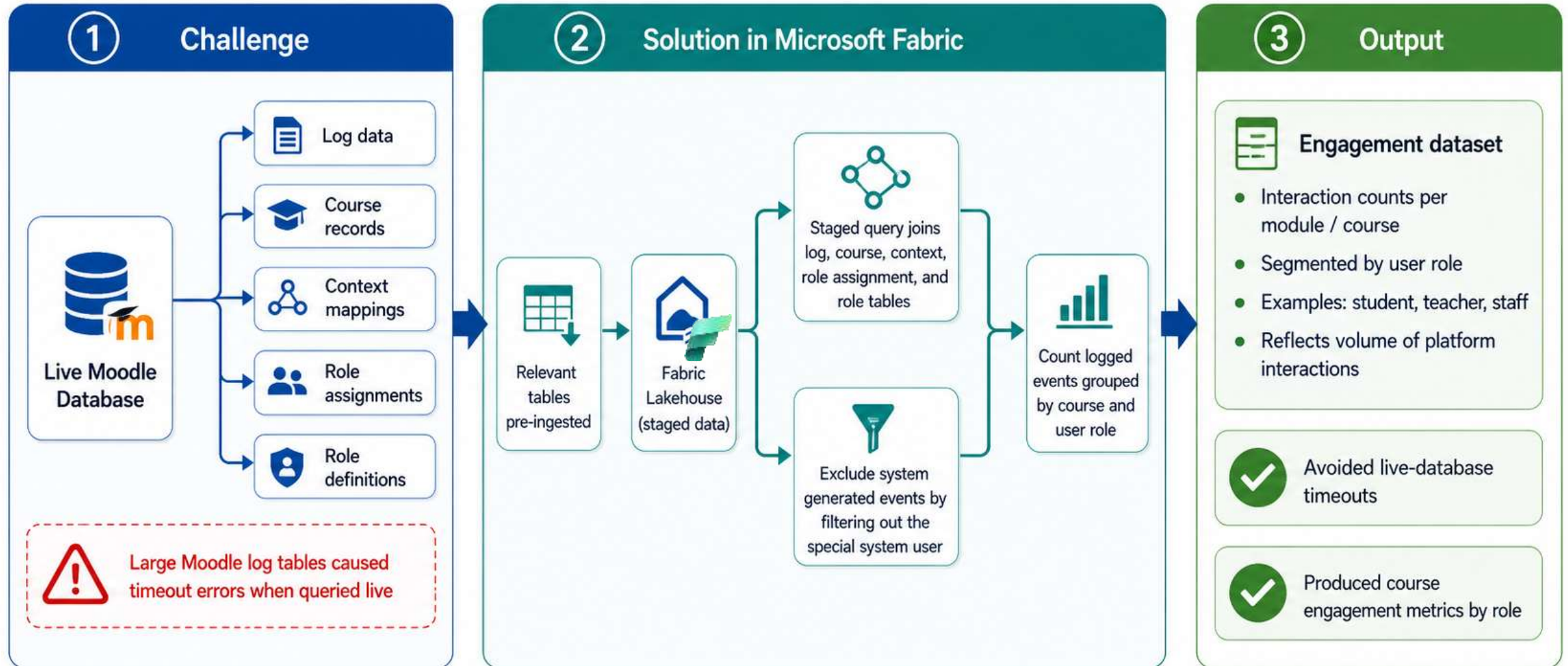
- 70,735,906 Interactions logged in the VLE
- Live records span ~ two academic years
  
- What does that mean?
- What is an interaction?
- What can we learn from this?



Cutoff 01/03/2026

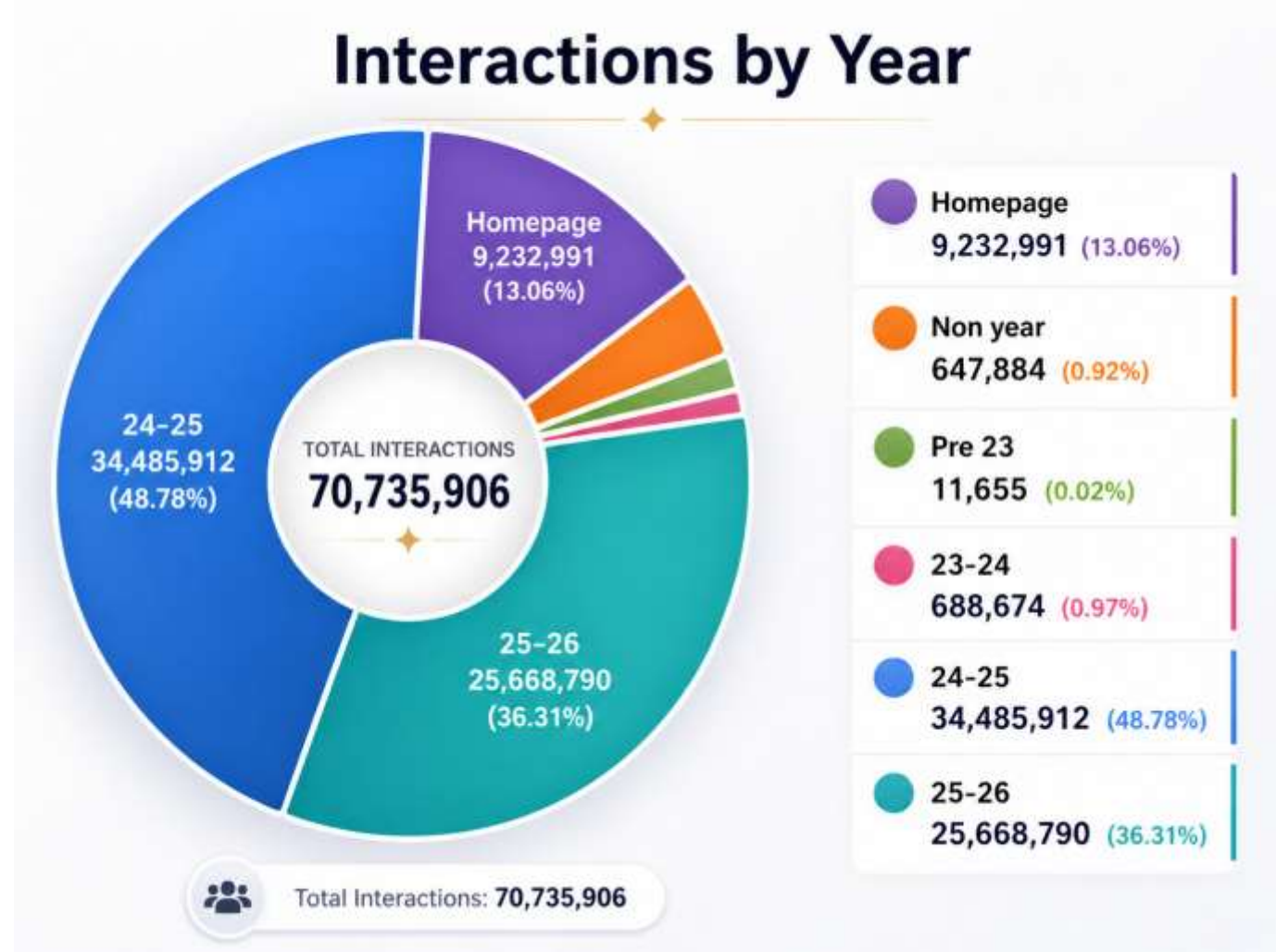
# Extracting Engagement Data from Moodle:

Large Moodle log tables were staged in Fabric to avoid live-query timeouts and produce course engagement counts by user role



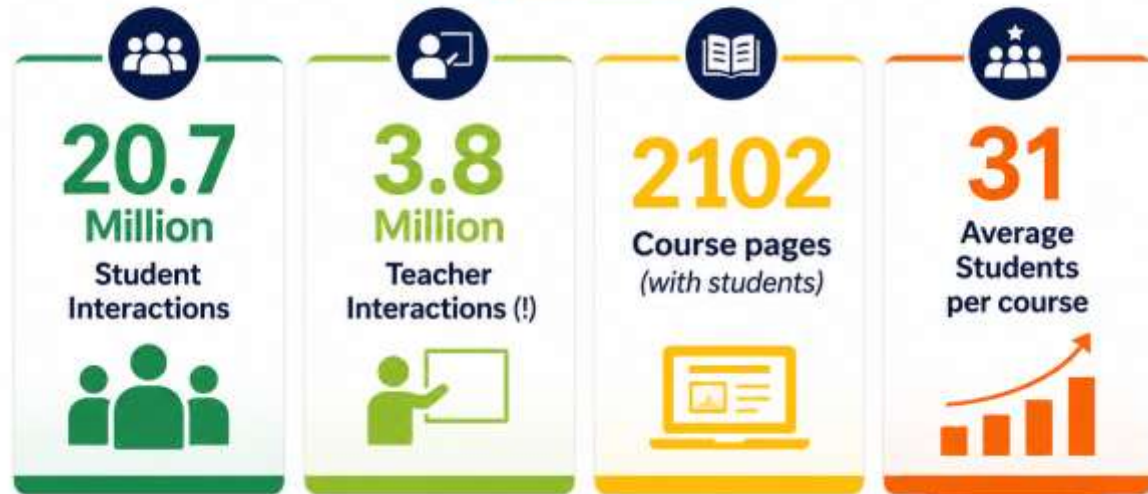
# Let's look at student activity:

- 70 Million → 47 Million interactions are student interactions inside course pages
- 9.2 Million interactions with the Moodle landing pages (!)



# What's in Moodle?

## 2025-26



(Up until 1/3/26)

## 2024-25

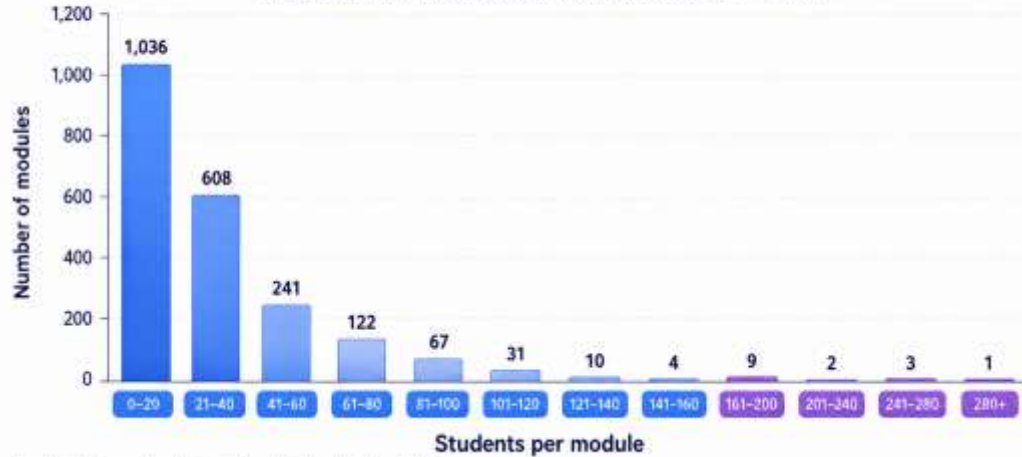


(Full year less any removed data)

# 2024-25

## Students per Module

Distribution of modules by enrollment band | n = 2,133

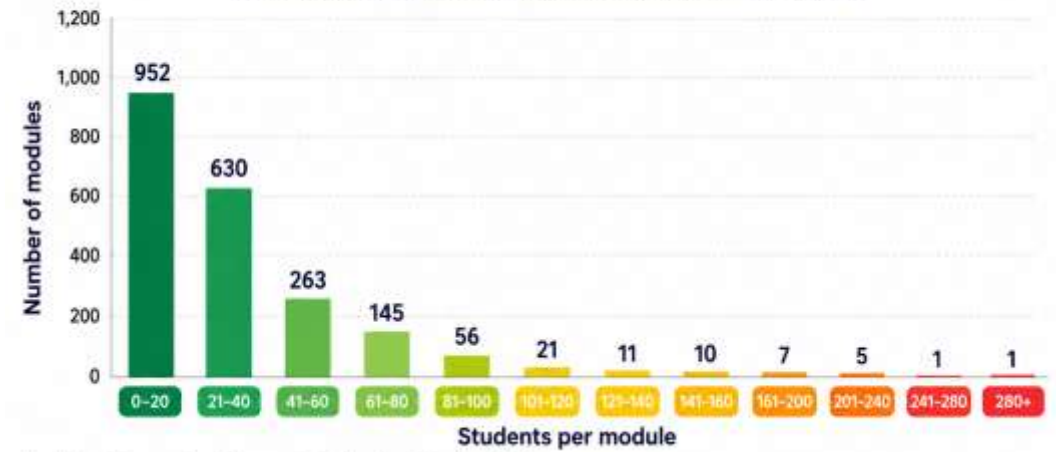


Results include rows where 'role\_name' = 'student' and 'year' = '24-25'.

# 2025-26

## Students per Module

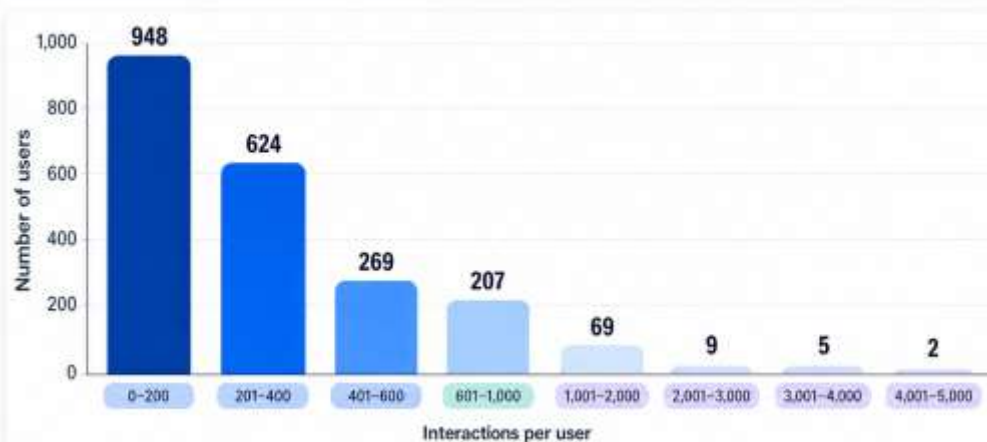
Distribution of modules by enrollment band | n = 2,102



Results include rows where 'role\_name' = 'student' and 'year' = '25-26'.

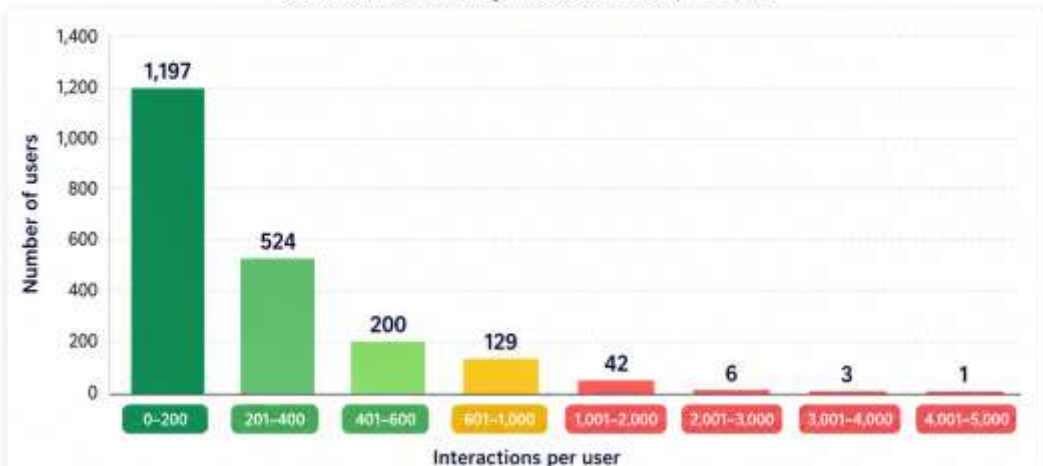
## Interactions per User

Distribution of users by interaction band | n = 2,133



## Interactions per User

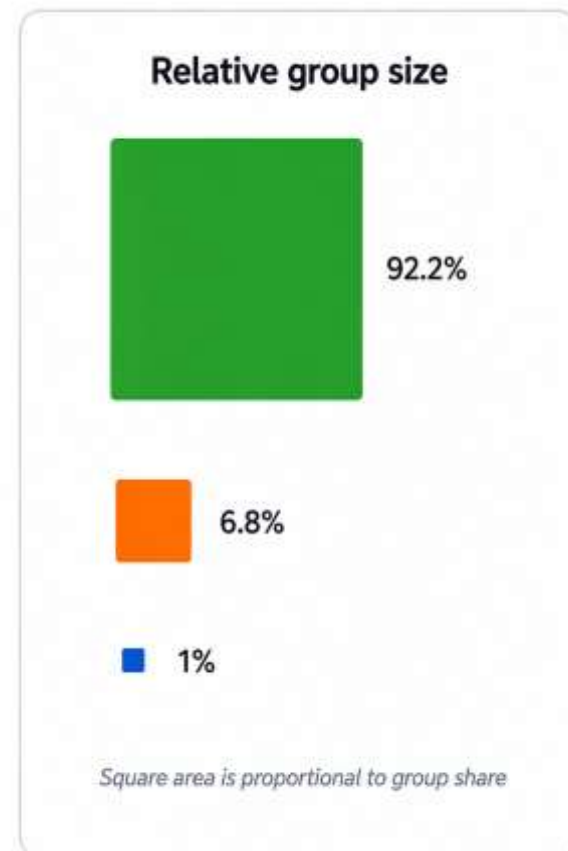
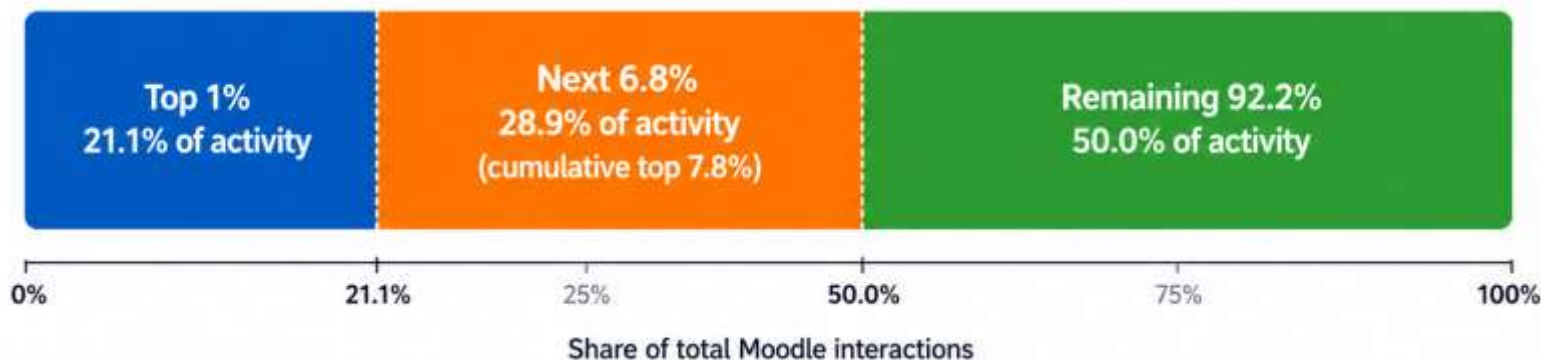
Distribution of users by interaction band | n = 2,102



# Take home:

## Where Moodle Activity Comes From

Bucketed view of total interaction share by module groups

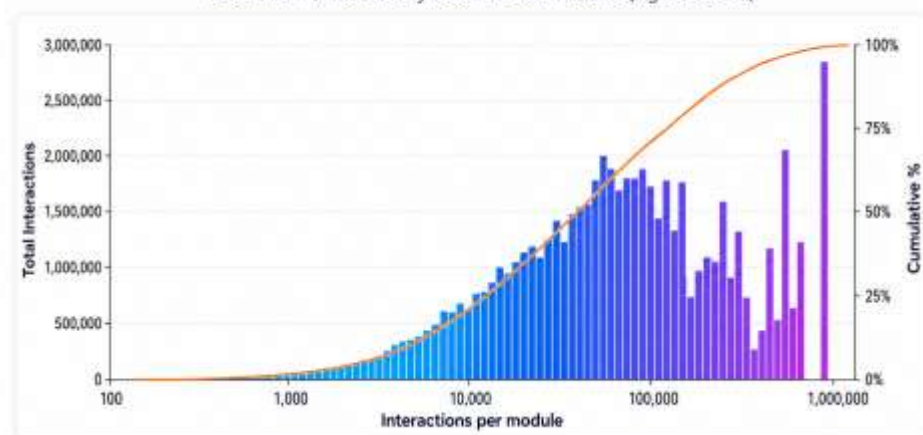


44% of Modules see <200 interactions per student - median is 232 interactions.

50% of all activity is concentrated in <8% of modules.

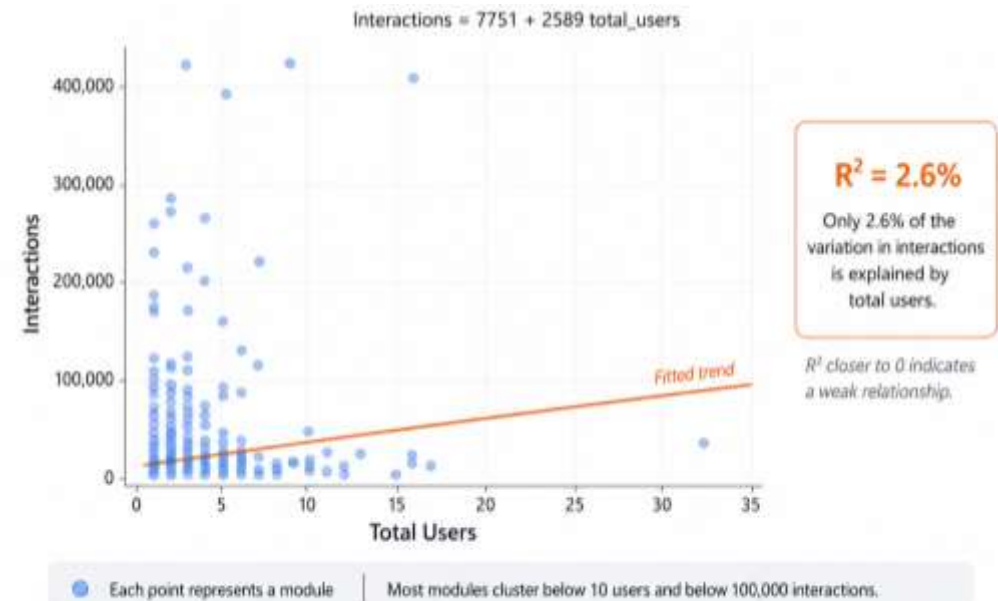
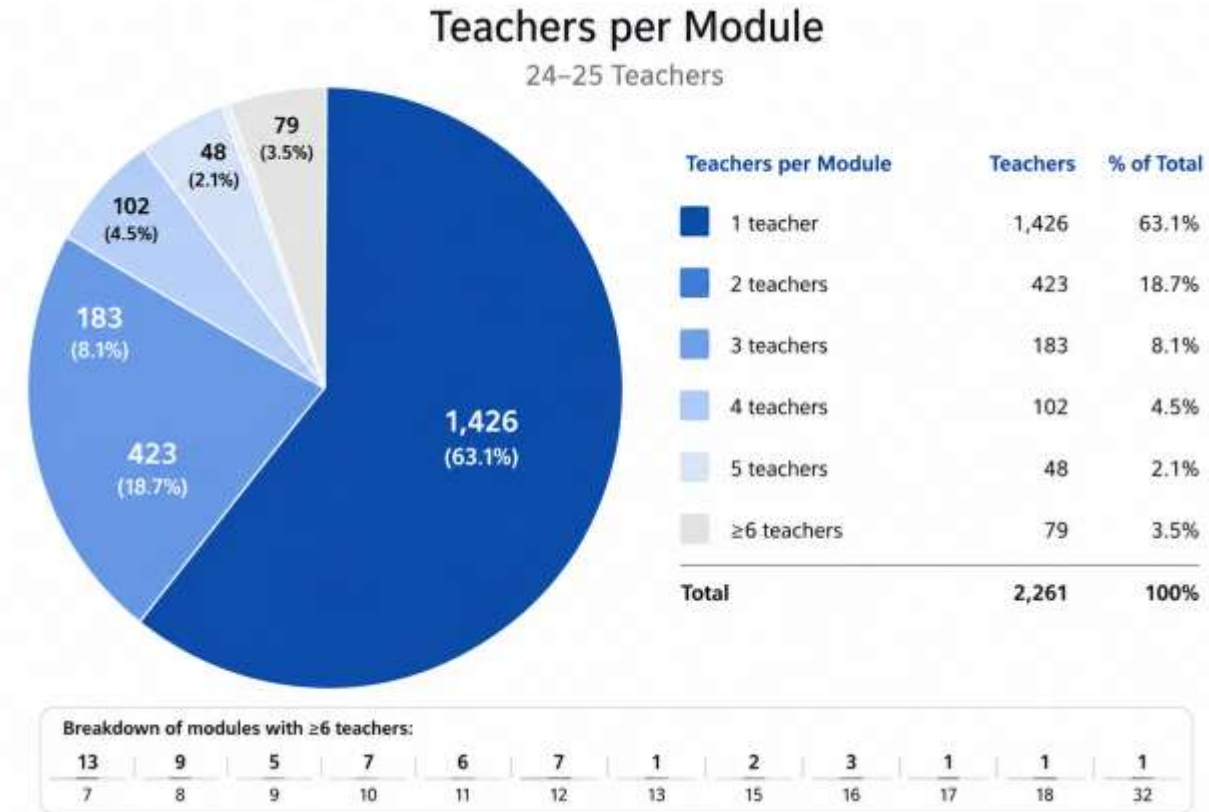
## Interactions by Module

Distribution of modules by total interaction volume (log-scale x-axis)



# Is Moodle a collaborative space?

- 63% of modules have only 1 “Teacher”
- (Mean 1.95 teachers per module)
- Less than 5% of modules use the non editing teacher role



**Why?**

# What are the attributes of high interactivity module?

- It isn't constrained to one subject area.

## Programme Diversity in the Top 1% of Courses

Based on matching module presence in an APS to a Moodle course



29

Level 8 programmes served



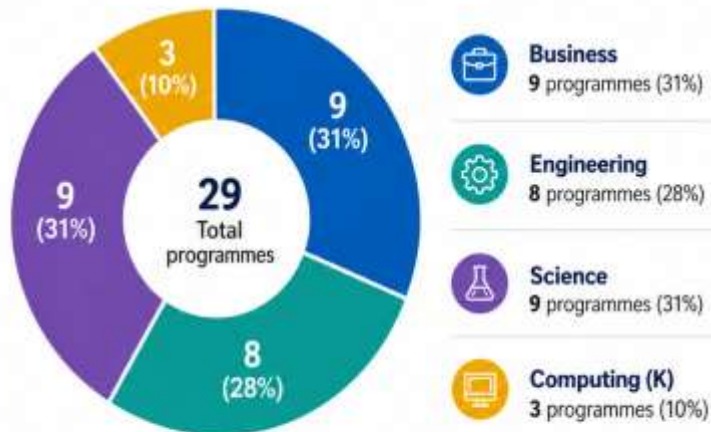
2,879

Student registrations in top 1% courses



Top 1% courses support a broad mix of programmes across four disciplines.

### Discipline composition of the 29 Level 8 programmes



**Business**  
9 programmes (31%)

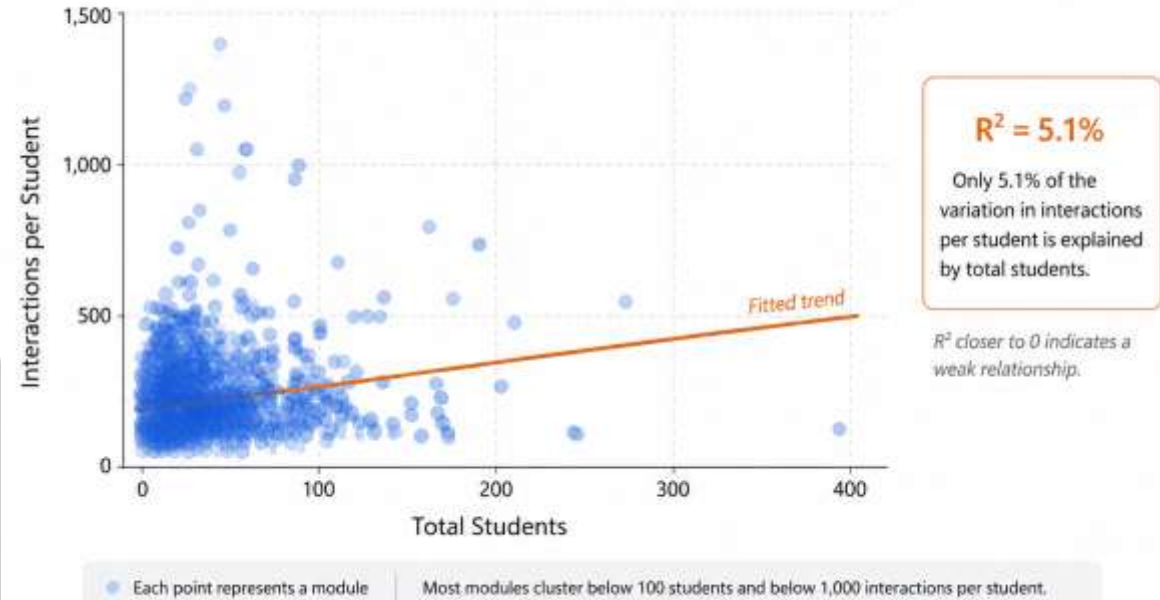
**Engineering**  
8 programmes (28%)

**Science**  
9 programmes (31%)

**Computing (K)**  
3 programmes (10%)

## Module Size Is a Poor Predictor of Interaction Intensity

Interactions per Student vs Total Students

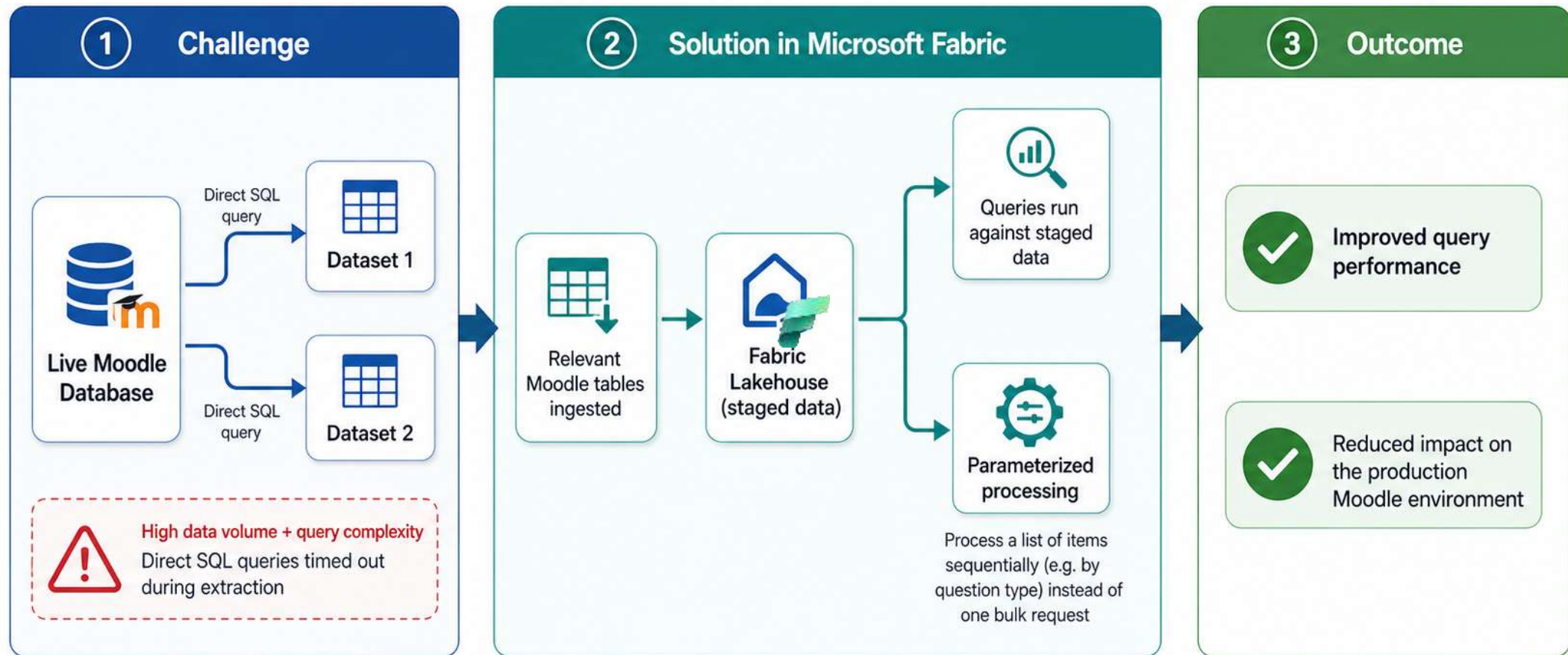


Note: Axes capped to improve visibility. 6 modules with interactions per student > 1,500 are not shown (max = 4,596).

- It isn't constrained to "large" modules

# Extracting Feature Data from Moodle:

Staging source data in Fabric avoided live-database timeouts and enabled more efficient extraction



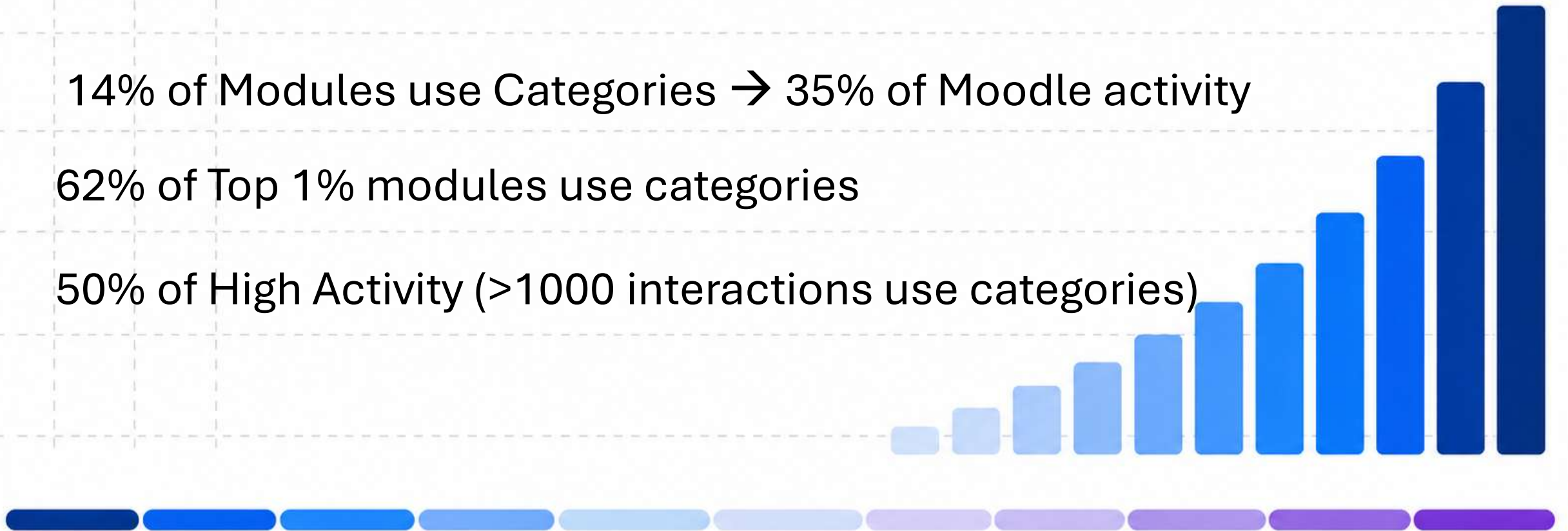
# What *are* the features of a high interactivity course?

Complex Grade books:

14% of Modules use Categories → 35% of Moodle activity

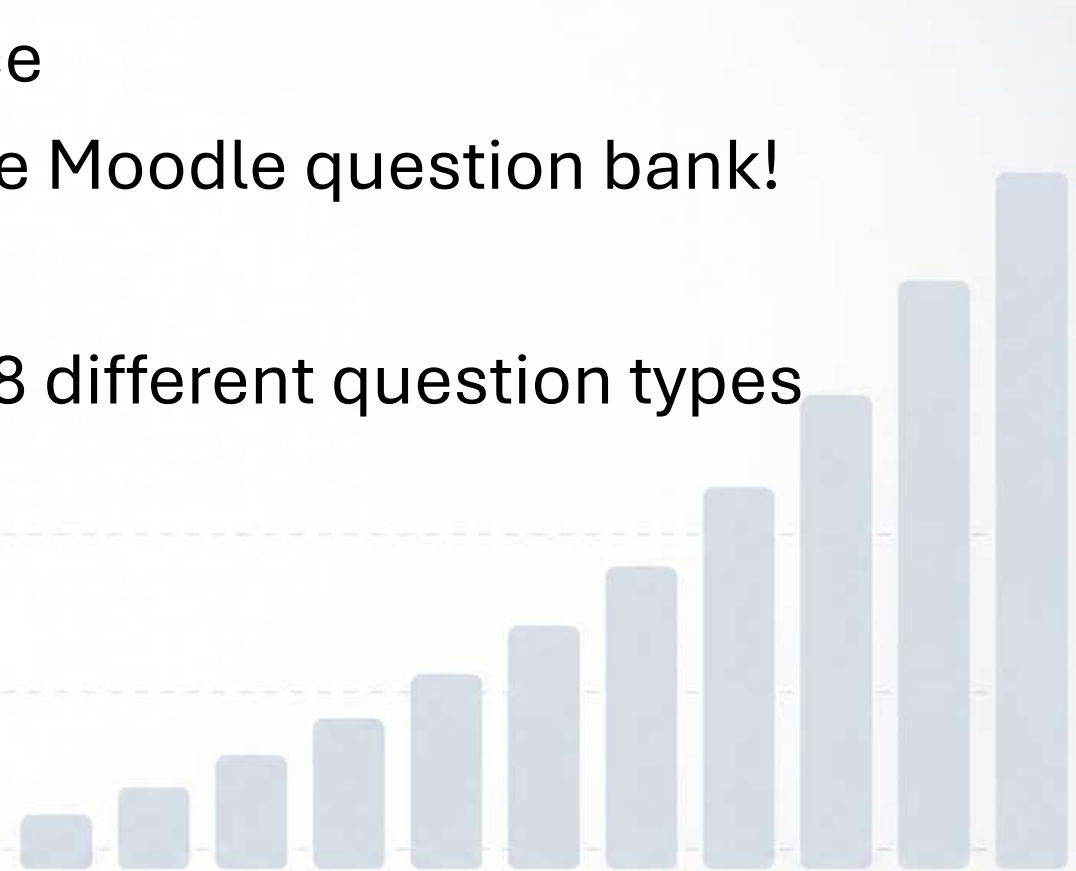
62% of Top 1% modules use categories

50% of High Activity (>1000 interactions use categories)



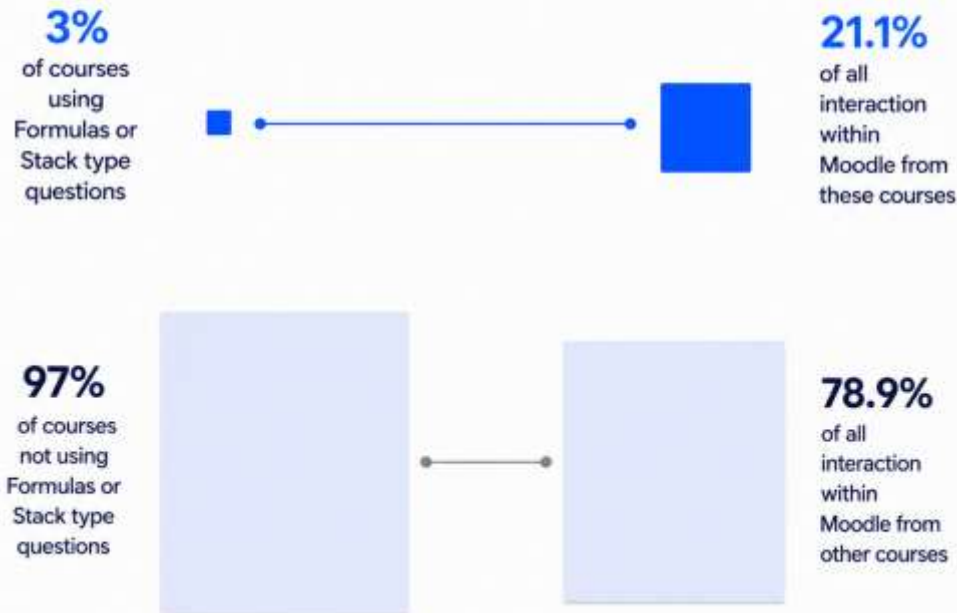
# Other Features?

- Assessment variety – not at first glance
- **3,018,448** questions are present in the Moodle question bank!
- Top 1% courses have an average of 9.8 different question types
- High interactivity courses average 8.7
- All courses average 8.0



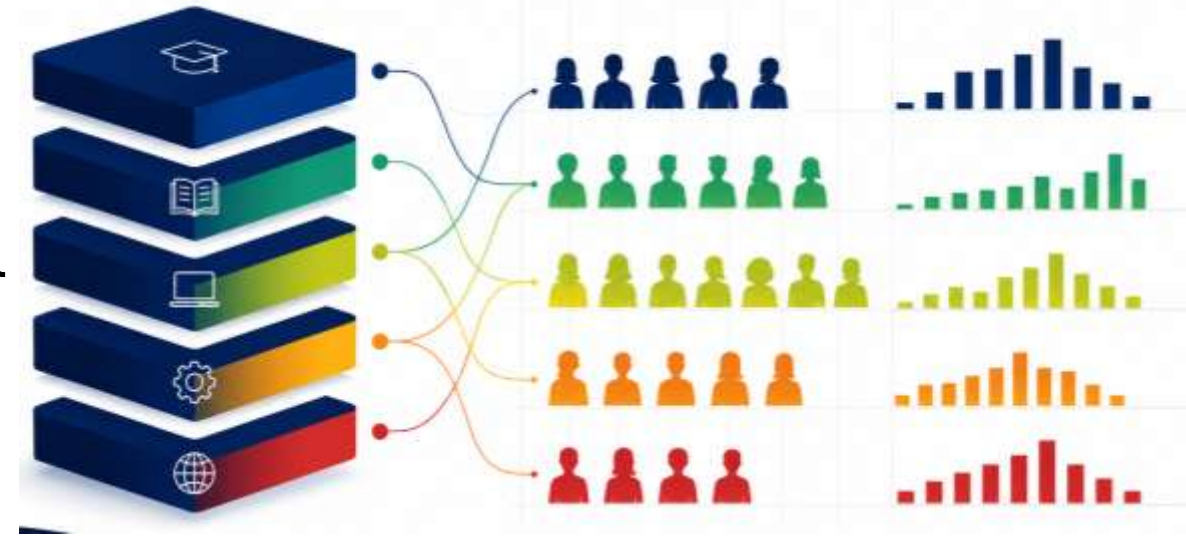
# Specific High Value Assessments

**3%** of courses using Formulas or Stack type questions drive **21.1%** of all interaction within Moodle



- **3,018,448** questions are present in the Moodle question bank!
- 3% of courses (66) use Formulas or Stack type questions and drive 21.1% of all (14.4% for Formulas, 9.4% for Stack; only 14 use both question types)
- On average 7 times greater than average engagement per module with these question types present.

# So what can we say?



## 1. Evidence based analysis is critical

- Without quantitation it's all guessing

## 2. The VLE is inhomogeneous

- There is enormous diversity in how people teach and how they use the VLE

## 3. It is a critical dependency for many pedagogical approaches which affect a majority of students across disciplines

- It enables more than teaching at scale

## 4. Specific grading and assessment approaches are important

The VLE has several critical technologies which enable high engagement



# REAL Analytics

*Reliable, Engaging, Authentic, Learner-focused*



Funded by TSAF: (Technological Sector Advancement Fund), WP 5.



THANK YOU

We appreciate your time today!  
Please reach out to our REAL Analytics team

## Learning Analytics Ecosystem: 4 Dimensions



- **Insight & Retention** – early-warning analytics for equity and student success.
- **Inclusive Communication** – DLSS (Disability & Learning Support Services) integration and secure VLE
- **Feedback for Learning** – adaptive, mastery-oriented feedback pathways.
- **Ethical Governance** – transparent, secure and ethical

**Alignment:**  
CINNTE Report and ATU's Strategic Plan

**Infrastructure:** Powered by Microsoft Fabric, institution-wide scaling, source-agnostic platform (*Banner, VLE, RMS, Entra...*).