

Title:

Rethinking Assessment in English-Medium Instruction Higher Education with an Individualized Exam-Weighting Design

Research Overview:

This study proposes an assessment approach for English-medium instruction higher education in which accumulated formative work is mapped to individualized reductions in final-exam weight. The approach was implemented in an undergraduate circuit theory course and evaluated using multi-year comparisons of attendance, withdrawal, assessment performance, and learner-reported exam-related anxiety across cohorts.

Purpose:

In many higher education courses, grading relies on fixed weighting across components, often assigning a substantial proportion to high-stakes exams. Under this structure, student effort may concentrate near exam periods rather than being sustained throughout the term, which can weaken ongoing engagement and increase exam-related pressure. These concerns can be more salient in English-medium instruction (EMI) contexts, where students manage disciplinary learning alongside additional language demands.

Alternative assessment practices are often introduced to encourage continuous learning, such as project work, portfolios, participation credits, peer assessment, or gamified incentives. However, many approaches retain fixed summative weights, add formative elements without changing the stakes of the final exam, or depend on external rewards rather than incentives embedded in grading policy. Some also require substantial redesign and marking effort, which can limit scalability and consistent implementation. This study aims to develop and evaluate an assessment approach that links cumulative formative evidence to individualized exam stakes, and to examine whether this design supports sustained participation and persistence while maintaining assessment performance and reducing exam-

related anxiety in an EMI higher education course context.

Methods:

We developed an assessment mechanism in which the weighting of grading components is individualized, so each student can finish the course with a different final-exam weight based on their cumulative formative work. The final-exam weight starts at 100% and decreases linearly with each student's cumulative formative points, so that the final-exam weight equals 100% minus the cumulative formative points and the remaining weight is allocated to the formative component. For example, a student who accumulates 60 formative points completes the course with a 40% final-exam weight. Formative points are earned through multiple components across the term, including low-stakes learning activities and quizzes, and each student's running formative total and corresponding exam weight are updated throughout the semester in an online tracker accessible to the class.

We evaluated the mechanism in an undergraduate EMI circuit theory course using a mixed-methods, course-based design across multiple academic years (total n=103), comparing the implementation cohort with prior cohorts that used conventional fixed-weight grading. Quantitative outcomes included attendance at three semester checkpoints, course withdrawal rates, and performance on two in-term quizzes and the final exam. Student perceptions were measured using an end-of-semester Likert-scale questionnaire on engagement and exam-related anxiety, supplemented by open-ended comments. Descriptive statistics and correlational analyses examined patterns between formative accumulation and summative performance.

Results and Discussion:

Relative to prior cohorts using conventional fixed-weight grading, the cohort implementing individualized component weighting showed higher participation later in the semester and a lower withdrawal rate. Attendance was recorded at three checkpoints. At the final checkpoint, attendance was 9% in the lecture-only cohort and 81% in the implementation cohort, even though attendance was

not mandatory. Course withdrawal decreased from 26.0% in the lecture-only cohort to 1.3% in the implementation cohort.

Assessment results did not show a reduction in achievement. Across the two in-term quizzes, the implementation cohort obtained higher mean scores than earlier cohorts. Score distributions also shifted upward: the third and fourth quartiles increased, indicating that the change was not limited to a small group of high-scoring students.

Survey responses were consistent with the attendance and withdrawal patterns. On a 5-point Likert scale, students reported engagement at a mean of 4.48. They agreed that the assessment design reduced pressure associated with a single high-stakes final examination (mean 4.41). They also reported reduced second-language learning anxiety (mean 4.21). Willingness to recommend adopting the approach in similar courses had a mean of 4.39.

To examine whether formative accumulation aligned with summative achievement, we analyzed associations between cumulative formative points and quiz performance. Cumulative formative points correlated with the two quizzes ($r = 0.53$ and $r = 0.56$). This pattern indicates that students who accumulated more formative points tended to perform better on the quizzes. The results are consistent with the interpretation that linking individualized exam stakes to cumulative formative work can support participation and persistence in an EMI higher education course while maintaining quiz and final-exam performance.

This study used a multi-year, single-course cohort design, which supports practical evaluation but does not isolate causal effects. A follow-up study could implement the mechanism in parallel course sections within the same term, or use matched comparisons across sections, while tracking attendance, withdrawal, assessment scores, and survey measures with the same instruments.

Keywords

Assessment, English-medium instruction, engagement, formative assessment, summative assessment