

## Chapter 94

# A Case for Integration: Assessment and Games

Alex Moseley  
University of Leicester, UK

### ABSTRACT

*There is growing interest in assessment of student learning within education, not least because assessment practice within some sectors (the UK higher education sector for example) is stagnant: many courses designed independently to the assessment method and assessed through a small number of traditional methods. Games-based learning has shown little deviation from this pattern – games themselves often removed from assessment of the skills they are designed to teach, and in the worst cases from the intended learning outcomes: gamification being a particularly formulaic example. This chapter makes the case for an integrated approach to assessment within learning games and the wider curriculum, drawing on elements within game design that provide natural opportunity for such integration. To demonstrate and evaluate such an approach, integrated assessment case studies (including a full study from the University of Leicester) are presented and discussed.*

### INTRODUCTION

Assessment and games share a number of features, both in their design and in their tendency to stick to tried and tested methods. In this chapter, these similarities will be discussed in light of the current interest in both assessment and games for learning.

Written from a standpoint within UK Higher Education (HE), the chapter opens with an overview of assessment within this context, and within game design itself, including the recent interest in gamification approaches.

There are various design features within games that provide good models for assessing student progress and learning, and these will be considered in detail and developed into a range of internal and external models for assessment in learning games. The most integrated of these, *implicit assessment*, was used by the author in an undergraduate History games-based course, and this will be used as a case study in applying the models to a real world example.

It is hoped that this chapter will question existing approaches to assessment within learn-

ing games, and encourage the reader to see the advantage in using game elements to integrate assessment deeply within both games-based, and non-games-based learning activities.

## BACKGROUND: A LENS ON ASSESSMENT

The recent interest in academic assessment (and its close partner feedback) has developed as governments, institutions and parents focus on the quality of programmes and - in particular – student outcomes. In Higher Education in the UK, the annual National Student Survey (NSS, 2011) has, over the past five years, revealed assessment and feedback as the area students are most dissatisfied with across the sector (in 2009 and 2010 they produced the lowest average score for all areas of student satisfaction: 65 and 67% satisfaction respectively). In UK secondary education, OFSTED reported as far back as 1996 that marking “fails to offer guidance on how work can be improved” and “reinforced under-achievement and under-expectation by being too generous or unfocussed” (cited by Black, Harrison, and Lee in their 2004 review of existing practice, that revealed similar concerns across the sector).

What is assessment in a learning context? The question/subject is too broad to cover in detail here, but within the author’s own context, UK Higher Education, the Quality Assurance Agency for UK Higher Education (QAA), in its 2012 Quality Code, defines assessment as fulfilling four roles: promoting learning through feedback; evaluating knowledge, understanding, abilities or skills; establishing student performance/progress via a mark or grade; and publically acknowledging a level of achievement (QAA, 2011, p1).

Rowntree (1987, pp117-162) identifies a number of opposing aspects of assessment, that help to give a sense of both the length and breadth of the topic. These are:

- **Formal vs. Informal:** Also to be thought of as obtrusive vs. unobtrusive, formal assessments are those developed by the instructor specifically with the aim of assessing (such as an examination); whereas informal assessment occurs naturally as students work/study/practice/perform.
- **Formative vs. Summative:** Linked closely with the role of feedback, formative assessment is that whose main aim is to help the student learn and develop; whereas those assessments that serve to grade, categorise or assess against formal criteria are summative. The two types can be merged in one assessment.
- **Continuous vs. Terminal:** Assessments are continual if they take place throughout the course; they are terminal if they only take place at the end (where they tend to be both formal and summative).
- **Course Work vs. Examinations:** Course work is produced as the student works through the course, yet may be submitted and marked either continuously or terminally; examinations assess the students’ knowledge at a particular point of time on a particular topic.
- **Process vs. Product:** Assessments often result in a tangible *product*: a report, essay, painting, website, mathematical solution, etc. Instructors can assess this product, or the process the student goes through to create it (where much of their development occurs).
- **Internal vs. External:** The assessor who also teaches, tutors or assists the students on their course is *internal*; assessors who are divorced from the day to day learning, and simply assess the product or process are *external*.
- **Convergent vs. Divergent:** Assessments can elicit or reward *convergent* thinking (ie. thinking that arrives at a single well

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