

An evaluation of the use of formative assessment for general management students in promoting learning of Finance and Accounting

Robin Lowbridge

Mark Price

University of Wolverhampton Business School (UWBS)

Background and Rationale

Financial Management and Accounting is a subject that is offered widely on general management courses but there is some evidence at local, national and international levels that suggests that the learning experience for students on these courses is problematic.

This project emanated from a desire to address this issue at The University of Wolverhampton Business School (UWBS). The project leader is module leader for MG 4051 Financial Management and is a member of the Accounting and Finance Division of UWBS. Module MG 4051 is part of UWBS postgraduate portfolio for Part Time/Full time students attending MBA and MA in Management Awards.

Students on Module MG 4051 bring with them a wide range of experiences, skills and knowledge to the module. The module is intended for non-finance specialists. Most of the students, therefore, have little or no financial knowledge. The full time students come from international backgrounds, the part time students are mainly from the West Midlands region. Prior to this project, students and teachers had problems with this module for the following reasons:

- The variation in prior financial knowledge and experience made it difficult for teachers to meet all of the students' learning needs.
- Finance and Accounting are technically complex subjects which many students find difficult to understand.
- Class contact time had been reduced as part of wider school policy
- While student feedback had been positive in the sense that students thought the sessions are well organised and that the supporting materials on the WOLF system were useful, they also commented that they would like to have participated more in class.

Thus the key aim of this project was to increase student motivation, participation and understanding across the wider group by introducing formative assessments. Similar problems have been experienced in teaching finance to general management students on other programmes and it was envisaged that the lessons learnt here might be more widely applicable to other financial management and accounting modules.

The aim of this project was to evaluate the effectiveness of formative assessment both as a diagnostic and developmental tool for the improvement of student learning on this module. Formative assessment would be used:

- Diagnostically to help students assess their levels of knowledge without fear of the result counting towards summative assessment (i.e. assessment which summarises what students have achieved), and;
- Developmentally to help tutors identify and deal with specific gaps in student knowledge.

The project took the form of an evaluation of a change in assessment practice. A range of formative assessments were devised and used in delivering the module. The effect of these assessments on student learning and performance was evaluated and the conclusions were drawn from this.

The Research

The project commenced with a literature review to establish what research had been done in this area to date. While much has been written about the use of formative assessment in general, relatively little has been written about the use of formative assessment in teaching Finance and Accounting. The conclusions in the available literature are that formative assessment can be a powerful tool in managing the student learning experience. However it is necessary to ensure that the type of formative assessment chosen is appropriate. In developing the appropriate formative assessment, the following factors need to be borne in mind:

- Students need to see how it relates to the summative assessment, otherwise they will not see it as relevant, and not undertake it.
- Feedback needs to be immediate and appropriate. If it is not students move on to new subject content and it will not be likely to result in additional learning activity.
- The feedback should be without grades which can be de-motivating if the student knows that he/she is near the bottom of the class. The focus of feedback should be on identifying errors and misconceptions and suggesting strategies to correct these.
- The use of formative assessment needs to avoid placing unreasonable extra burdens on staff.

The next stage of the project was to develop formative assessments for MG 4051 Financial Management, taking account of the above factors. The following types of formative assessment were developed and then incorporated into appropriate stages of the module:

Type 1 - Two stage assessment –feedback at formative stage 1 (without marks) with the aim of helping students to submit a better summative stage 2 (with marks)

Type 2 - Formative assessment that resembles summative assessment

Type 3 - Objective tests/ Multiple Choice Questions

The Evaluation Process

Evaluation by students

At the start of the module the views of the whole cohort of students were sought on how far they felt they could already meet the module learning outcomes. During the course of teaching the module the whole cohort of students were surveyed on their progress with the formative assessments. At the end of the module their views were ascertained as to how they felt they could now meet the learning outcomes and specifically asked to what extent the formative assessments had helped them to achieve improvement (see Appendix 1 for the student survey used).

Evaluation by staff

In addition, a focus group of students was held to follow up the questionnaire responses to gain a deeper understanding of the issues raised. The module team were also asked (by question and discussion) their views on the effectiveness of the assessment methods.

Evaluation by comparison of grades

An analysis of student grades for 2004/2005 was made and compared to grades for 2003/2004 and 2002/2003 to ascertain whether there had been any apparent improvement.

The above evaluation process was undertaken twice, first in semester 1 and again in semester 2 of the academic year 2004-2005. The purpose of doing the exercise twice was to see if the same results were obtained from two different types of student. Semester 1 students were predominantly full

time, pre experience students from overseas, whereas semester 2 students were part-time, post-experience students from the West Midlands region. The findings from this evaluation are presented below.

The Outcome - Research Findings

Student Evaluation

Full Time Student Responses

The full time students felt that the module had enhanced their ability to meet the learning outcomes considerably. Average scores for Question 1 rose from around 2.06 at the start of the semester to 6.0–7.00 by the end.

The answers to question 2 demonstrated that students found all types of formative assessment useful. In particular the exercise on interpreting financial accounts was highly appreciated and scored an average of 7.1. Also the requirement to submit a synopsis for the assignment was also appreciated and scored an average of 6.9. The answers to question 3 supported the view that formative assessment encourages student participation.

In terms of overall impact on developing learning, the highest rated method were the presentations by the lecturer with a rating of 8.1. Formative assessments were not too far behind this at 7.2. Surprisingly the WOLF site materials were rated fairly lowly. (This is an area for further research. It may be a comment on the standard of materials currently on WOLF rather than the medium itself).

Part Time Student Responses

Part time students also felt that the use of formative assessments had a considerably enhanced ability to meet the learning outcomes. Average scores for Question 1 rose from around 2.0 at the start of the semester to 6.5–7.0 by the end.

The answers to question 2 again demonstrated that students find all types of formative assessment useful. If anything the scores were higher than for the full time students. The highest rated exercise was the exercise of preparing a synopsis which scored an average of 8.8. The answers to question 3 again supported the view that formative assessment encourages student participation.

In terms of overall impact on developing learning, the highest rated method was presentations by the lecturer with a rating of 9.3. Formative assessments scored 7.9 which was a high score. The WOLF site materials were not far behind at 7.9 and it was only self directed reading at 6.5 which scored significantly below the other methods.

In broad terms the results of the survey from the part time group were similar to those of the full time group. Both groups felt that formative assessment improved the learning experience. In particular they felt that the two stage method of preparing a synopsis for the assignment and also the use of previous case study exams were very useful.

Discussions with student focus groups

At the end of each semester a follow up session to the questionnaire was held with the class. Students were asked to expand upon or explain the answers they had given in the questionnaire. Students explained that the preparation of a synopsis on the assignment (Type 1 formative assessment) was well received because it gave them a clearer understanding of the task and guidelines. It helped them to assess whether they were heading in the right direction and enabled them to make adjustments if necessary. It also encouraged them to start working on the assignment at an earlier stage, rather than leaving it to the last minute! Students felt strongly that this should be done for all assignments in all subjects –not just finance.

The opportunity to attempt two previous Case Study Exams (Type 2 formative assessment) was valued as essential by many because it gave students greater insight into the types of question that the examiner was likely to ask and enabled them to practice exam technique. It also helped to give

greater confidence to students who were frightened of exams. This was particularly the case for part time students, some of whom had not done exams for many years.

Students also found the Objective Test (Type 3 formative assessments) to be useful in developing their understanding of the subject and assessing where there were shortfalls in their understanding. Students felt that the use of assessments in class helped to vary the pace of the class and make them more interesting. They also commented that the assessments were referred to outside of class to reflect upon their learning to date.

Students felt that the use of assessments improved their motivation to work outside class.

Staff Responses

This questionnaire was answered by Mark Price and Robin Lowbridge, the two staff who had taught on the module in the year. The responses were then discussed in a module team meeting. It was felt that the use of formative assessments encouraged students to participate more in class. However, in spite of students claims that the formative assessments encouraged students to work more outside of class, neither tutor could corroborate this. Nevertheless, it was felt that the use of formative assessments helped to make class sessions more varied and interactive and that teaching was a more satisfying experience.

Some types of formative assessment did not create an extra burden because they were self marked by students, but it was felt that the exercise in respect of examining a synopsis required a lot of staff time and was a burden. To some extent however this may have been offset by the outcome of students producing assignments that were more clearly structured and therefore easier to mark.

Analysis of exam grades (for both cohorts)

The analysis of exam grades showed little difference from previous years although there was a slight improvement in the results of the part time students. There are limitations to the validity of tracing exam results over a series of years because differences between years can be caused by a number of factors, and it is difficult to separate out a change in teaching methods from other factors. Nevertheless, these data provide a source of triangulation to the above findings.

Conclusions

There is a close relationship between the findings of the study conducted on the MG 4051 Financial Management module and the literature on formative assessment in general.

In this project we have applied the principles of good formative assessment to a UWBS Financial Management module and identified and tested a set of formative assessments. The feedback from students and staff indicates that the formative assessment:

- Supports students in learning how to learn and become more independent learners.
- Assists students in preparation for summative assessments for the module.
- Provides staff with insight into students' strengths and weaknesses and thus assists them in identifying remedial actions.
- It made the teaching the module a more interactive and pleasurable experience.

In most cases it was possible to undertake the formative assessments without increasing overall workload on staff. However the exception was the use of two-stage assessment, where the tutor was required to formatively assess a synopsis in order to help the student prepare for the summative assignment. This poses a difficult problem to reconcile because students find the review of the synopsis to be highly valuable. Perhaps the way forward could be for staff to find ways of reducing time spent on other aspects of tuition on the module.

It could be argued that the findings from this project are not relevant to other subject areas. However the team would argue that it is reasonable to draw inferences from this project that may be at least partially replicable elsewhere, for example, in situations where subject understanding is developed on

an incremental basis and where understanding of the subject at one stage is a pre-condition for its understanding at the next stage.

Key Recommendations For the Future

This project has demonstrated that the formative assessment can be applied effectively in the area of finance for non-financial managers. In particular the following methods are highly valued by students and it is recommended that module teams in this subject area give consideration to using them on their modules.

Type 1 Two stage assessment –feedback at formative stage 1 (without marks) which helps students to submit a better summative stage 2(with marks)

Type 2 Using formative assessment that resembles summative assessment (e.g. mock exams).

The project team also feels that by inference the above recommendations could be applicable to other subject areas.

Future Developments

The findings on this project will be presented internally to colleagues in the Accounting and Finance Division. They will also be disseminated to the UWBS Business Education Research Cluster for consideration for use by other subject areas in the School. An expanded version of this project report is available from the author for other members of staff who may wish to apply the findings to other subject areas.

Bibliography

- Beard, V. (1993) Classroom assessment techniques: tools for improving Accounting Education. *Journal of Accounting Education* 11: 293-300
- Biggs, J. (1999) *Teaching for quality learning at university*. Buckingham SRHE/OUP
- Bradford, M. (2003) A View from the Top. *Exchange* 4 Spring 2003 York
- Broad, M., Mathews, M. and McDonald, A. (2004) Accounting Education through an online supported virtual learning environment *Active Learning in Higher Education* 5, 2, London .
- Brown, S. and Knight, P. (1994) *Assessing learners in Higher Education*, London, Kogan Page.
- Brown, S., Race, P. and Smith, S. (2004) *500 Tips on Assessment*, (Second Edition), London, Routledge Falmer.
- Carroll, M. (1995) Formative assessment workshops :feedback sessions for large classes. *Biomedical Education* 23, 2, pp. 65-67
- Cowan, J. (2003) Assessment for learning – giving timely feedback *Exchange* 4 Spring, York.
- Falchikov, N. (2005) *Improving assessment through student learning*. London, Routledge Falmer.
- Gipps, C. (2003) Should universities adopt ICT based assessment ? *Exchange* 4, Spring, York
- Grinder (1991) *Riding the information conveyor belt*. Portland, OR : Metamorphus Press, 1991.
- Hand, L., Sanderson, P., and O’Neil, M. (1995) Fostering deep and active learning through assessment *Accounting Education* 5, 1, pp. 103-119 (1996)
- Harwood, E. (1999) Classroom assessment: educational and research opportunities. *Issues in Accounting Education*; Nov 1999, 14, 4.
- Heywood, J. (2000) *Assessment in higher Education*. London , Jessica Kingsley.

- Kolb, D.A. (1984) *Experiential learning: experience as a sources of learning and development* Englewood Cliffs , NJ Prentice Hall.
- Houghton, W. (2003) Aligning learning outcomes for effective assessment practice. *Exchange* 4 Spring, York.
- ILT (2001) *The ILTA Guide, Inspiring learning about teaching and assessment* , ILT York.
- Honey, P. and Mumford, A. (1992) *The manual of learning styles*. Maidenhead: Peter Honey
- Innis, K. (1996) *Diary Survey: how undergraduate full time students spend their time*. Leeds: Leeds Metropolitan University.
- Jones, C.J. (1996) Assessment and Accounting Education . *Accounting Education* 5 (1), 99-101.1996.
- Lucas, U. (2000) Worlds apart: students' experiences of learning introductory Accounting. *Critical Perspectives on Accounting* 11, 479 –504
- Mutch, A. (2003). Exploring the practice of feedback *Active Learning* , 4, 1, ILTHE York 2003.
- Prosser, M. (1993) Phenomenography and the principles and practices of Learning, *Higher Education Research and Development* , 12, 1993, pp. 21-31.
- Race, P. (1998) *The lecturers' toolkit (Second Edition)*, London, Kogan Page
- Rust, C. (2002). 'The impact of assessment on student learning. *Active Learning in Higher Education* ILT 3, 2 . York
- Rust, C. (2002) The impact of assessment on student learning, *Active Learning in Higher Education*, 3, 2. 145-157
- Silberman, M. (1996) *Active Learning –101 Strategies to teach any subject*. Boston, Pearson Education.
- Yorke, M. and Thomas, L. (2003) Improving the retention of students from lower socio-economic groups. *Journal of Higher Education Policy and Management* 25, 1 May 2003.

Appendix 1 – Questionnaire Answered by Students

MODULE MG 4051

QUESTIONNAIRE ON USE OF FORMATIVE ASSESSMENTS

Dear Student

I am currently conducting research into the effectiveness of formative assessment in improving your learning experience. I would be obliged if you could spend a few minutes in answering the following questions.

You are asked to answer Question 1 at start and end of module and the rest at appropriate times during the module. Your individual answers will be treated in confidence.

Question 1 Achievement of Learning Outcomes

The main learning outcomes of the module are set out below. Please indicate the extent to which you feel that you meet these outcomes at the beginning and end of the module:

Please score on a scale of 0-10 where 10 means that you have fully met the outcomes and 0 means that you have not met them at all.

Learning Outcome	Score at Week 1 of module	Score at Week 11 of module
Understanding of theory on how financial information fits into the organisational decision making process and ability to apply this in an organisational context		
Ability to make a critical analysis of the theory on financial planning/ control and apply this in an organisational context		
Ability to make a critical analysis of the theory on investment appraisal and apply this in an organisational context		
Ability to make a critical analysis of the theory on long term financing decisions and apply this in an organisational context		
Ability to make a critical analysis of the theory on costing decisions and apply this in an organisational context		
Ability to make a critical analysis of the theory on pricing decisions and apply this in an organisational context		
Ability to make a critical analysis of the theory on company valuation and apply this in an organisational context		
Ability to make a critical analysis of the theory on financial reporting and apply this in an organisational context		

Question 2 Detailed Information on Formative Assessment

To be completed at the end of the session where you have attempted the formative assessments. Please provide detailed feedback on the usefulness of the formative assessments used in this module. Please score each answer on a scale of 0-10 where 0 = no use at all and 10 = extremely useful.

1) How useful was the exercise of preparing the synopsis (session 7/8) for your assignment

Mark out of 10	Supporting Comments

2) How useful were the two mini-case studies in enhancing your understanding of the financial issues covered in the case?

Case Name	Mark out of 10	Supporting Comments
Topic 3 Corporate Reporting		
Topic 7 Financial Strategy		

3) How useful has the test and discussion of a full case study in preparing you for the final case study exam.

Exam name	Mark out of 10	Supporting Comments
Full Case study week 11		

4) How useful were the objective tests / multiple choice tests in helping you to gain key knowledge

Test Name	Mark out of 10	Supporting Comments
Topic 1 – Accounting terminology (week 1)		
Topic 2 – Financial Planning (week 2)		
Topic 3- Corporate Reporting (week 3)		
Topic 6 – Discounting (week 6)		
Topic 7 Sources of Finance (week 6)		
Topic 9 Investment Appraisal (week 8)		

Question 3 – Overall Reflection on the use of formative assessment

To be completed at week 11. Please give your views on the following statements on a scale of 0-10 where 10 means that you totally agree with the statement , but 0 means that you totally disagree

Question	Score 1-10
The use of formative assessment on this module encouraged me to work more outside of class	
The use of formative assessment on this module encouraged me to participate more in class	
The use of formative assessment on this module meant that I was unable to participate in other activities in class which would have been more effective in developing student learning	
It took an unacceptable amount of time to complete the formative assessments	
It took an unacceptable amount of time to discuss feedback on the assessments in class.	
The module was a more satisfying experience for me because of the use of formative assessment.	

Question 4 – Reflection on Teaching Methods in General

To be completed at week 11. Please rank on a scale of 1-10 the usefulness of following learning methods used in the module (0 = no use in developing my learning , 10 = extremely useful in developing my learning)

Teaching Method	Grade out of 10	Comments on reason for grade
Presentations by Lecturer		
Classroom worked examples		
Classroom peer discussion		
Formative Assessments		
WOLF site materials		
Module essential text (Atrill)		
Self directed reading		

Question 5 – Other Comments

Are there any other general comments you would like to make on the use of formative assessment or other teaching methods on this module.

Thank you for completing this Questionnaire.

Please return it to your lecturer or to Robin Lowbridge, Room CA 217 Compton Park Campus