

Compensation and Condonement: Is this Acceptable in Outcomes Based Assessment?

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Abstract: The introduction of modular undergraduate programmes of study and credit based systems has given curriculum designers a wealth of opportunities such as the ability to add new modules to take account of the rapid changes taking place in technology and the changing student study patterns. Economic constraints have also had a significant influence in the design of programme portfolios.

Measures to assist progression, reduce failure and drop out, such as compensation and condonement, have been used almost without exception. Outcome based assessment is being adopted more widely but the Quality Assurance Agency (QAA) for Higher Education in the UK will expect all institutions to adopt an outcomes model in the near future. Outcome based assessment is not compatible with compensation or condonement and therefore if a full achievement model is adopted there is a danger of increasing the number of student referrals and failures.

Modularity can mask the overall aims and generic outcomes of a programme. This paper considers a novel approach to awarding credit for the achievement of outcomes which meets the requirements of a full achievement model thus avoiding compromising standards which has often been the case due to a wide variation in output requirements.

Keywords: assessment, outcomes, modularity, credit, compensation

Modularisation

The Credit Accumulation and Transfer Scheme (CATS), fostered initially by the Council for National Academic Awards (CNAA) in the UK, has initiated a move towards modularisation of undergraduate programmes of study commonly referred to as a Credit Accumulation Modular Scheme (CAMS). Modular schemes are universally accepted nowadays but in the early years there were opponents to their introduction. The advantages and disadvantages of modular schemes during the early years are summarised in [1]. The advantages today have not really changed and the most important are considered to be:

- Widening access
- Allowing more student choice
- Allowing flexibility in study modes
- Facilitating credit accumulation and transfer at home and overseas.

The recent introduction of student fees in the UK and thereby in the main students having to work to pay for their tuition is compatible with a modular approach. Students can vary their study pattern knowing full well that on successful completion of a module or number of modules they will be awarded the appropriate credit. The inability to complete a block of credit however in many institutions at present can hinder progression from one stage of the programme of study to the next.

The early disadvantages of modular schemes muted have largely been overcome except perhaps for the tendency to over assess students. There is however, a threat to standards because of the present wide variation. There is no doubt of the advantage to curriculum designers whereby a portfolio of programmes can be developed from a bank of modules with the benefit that some modules can be shared between often several programmes thus enabling an improvement to be made in the efficiency of delivery. Economic constraints will increase the need for portfolio development of programmes but there is an opportunity to address the concerns over assessment and standards as the Quality Assurance Agency (QAA) for Higher Education in the UK will require institutions to draw up a programme specification for each programme which will include outcomes based assessment. In addition programme outcomes will be matched against national subject benchmarks.

The Award of Credit

A number of credit systems have been devised over the years here in the UK and in Europe. These systems vary in volume of credit for a given notional learning time. Credit levels however in England, Wales and Northern Ireland are well defined with three levels for undergraduate study. Equivalent programmes in Scotland have four levels. Credit has long been and is still awarded for the successful completion of a module. In recent years there has been a steady move towards outcomes based assessment although in many institutions the introduction of learning outcomes has been no more than re-naming the programme specific objectives. The important distinction between learning objectives and learning outcomes is that the latter are followed through to assessment and therefore there is a strong link with the assessment criteria and assessment methods.

In an outcomes based approach credit points should be awarded for the achievement of appropriate learning outcomes at a particular level, however the generally tendency is only to award credit on a modular basis which implies that all the outcomes of a module have to be achieved before any credit can be awarded. One credit point can be regarded as reflecting the learning outcomes achieved through 10 notional hours of student effort. A typical academic year comprises 1000/1200 hours of notional learning time in the case of a full-time student. Standard modules vary considerably in length since curriculum designers have a choice in the number of standard length modules required to make up an academic year. For example, 12 X 10 credit modules, 10 X 12 credit modules or 8 X 15 credit modules. This leads to a module notional learning time varying between 100 and 150 hours in the case of a 1200 hour academic year.

Compensation and Condonement

Compensation is the process by which an assessment board, in consideration of the students overall performance, recommends that credit be awarded for a module or stage of a programme where the student has failed to achieve all of the assessment criteria on the grounds that the positive aspect of the overall performance outweigh the area of failure. The project report by the Quality Assurance Agency (QAA) /Northern Universities Consortium for Credit Accumulation and Transfer (NUCCAT) on assessment and credit [2] indicated that 68% of institutions allow compensation of failure. The majority compensate at all of the undergraduate levels. The report gives the main reason for compensation as to facilitate progression. Compensation between assessed elements of coursework is widely practised and the overall coursework mark in many cases calculated by the module tutor. Further compensation is often allowed in the assessment regulations between the overall coursework mark and the examination component. The likelihood of progression with different coursework/examination weightings and the reasons for generally lower performance in examinations is examined in [3]. Finally, compensation at module level is permitted either to reduce referral requirements, facilitate progression or facilitate an award. The maximum credit which can be compensated for is very variable but a typical value is 20 credits at each level (or stage).

Condonement is the process by which an assessment board, in consideration of a student's performance, recommends that failure in part of the programme does not need to be redeemed in order for the student to progress. The difference is then that credit is awarded in cases of compensation but not in cases of condonement. The report [2] indicates condonement can operate in one of two ways. To quote, "The overall credit requirement for progression or an award is lower than the number of credits attempted and students are permitted to fail modules to the value of the difference," and "Certain modules are identified as non-essential and students are not penalised for failure in these modules". The report also indicates that condonement is practised rather less than compensation but there is also a wide variation in the amount of credit condoned which is typically 20 credits at each stage.

Outcomes Based Assessment

Learning outcomes are typically developed at module level but it is all too easy in modular schemes to present too many hurdles to students. Module designers will have regard for what they expect the student to achieve but without perhaps an overview of the general aims and outcomes of the programme. This 'bottom up' approach can easily lead to over-assessment with the result that some failure is inevitable and hence the need to incorporate compensation and condonement in programme regulations.

A 'top-down' approach allows the development of an holistic model in which the programme generic outcomes can be formulated. Module outcomes are still required but should be developed in relation to the defined generic outcomes. Numerous papers have been written in the last decade on the generic skills required by engineers, however there is a tendency to just write down these skills in programme definitive documents. Traceability is all important and can easily be achieved by mapping techniques but is often overlooked in practice.

In recent years there has been a proliferation of competencies stated for the workforce engaged in technology and engineering such as the transferable skills developed by the National Council for Vocational Qualifications (NCVQ), referred to as Key Skills [4]. Skills specific to engineers are specified by the Engineering Council in the

3rd edition of Standards and Routes to Registration (SARTOR) [5] and the Engineering Occupational Standards for higher levels (OSC Eng) [6]. Generic skills are now also required by the Quality Assurance Agency (QAA) for higher education and are detailed in their guidelines for preparing programme specifications [7].

In any curriculum development a realistic approach must be taken in respect of what is reasonable to achieve. Too many generic skills can lead to difficulty in respect of traceability and too many outcomes at module level can lead to unnecessary referral or failure. A generic skills mapping model developed by the author for programmes generally considered to be in the subject area of Electrical and Electronic Engineering takes on a realistic view and is detailed in [8]. Experience has shown that a module will normally have a small set of designated learning outcomes with a suggested maximum of four. Each learning outcome statement is considered fundamental to the purpose of the module. Educational Excellence (EdExcel) providers of the national standard Business and Technical Education Council (BTEC) programmes introduced new engineering guidelines in 1997 [9]. These guidelines introduced outcomes based assessment for the first time in which modules typically have no more than four learning outcomes. Many pitfalls have come to light when introducing outcomes based assessment in BTEC and degree programmes. These pitfalls and ways of overcoming them are described in [3]

Compensation and/or Condonement in Outcomes based Assessment.

The QAA in their consultative paper [10] argue that the principles of compensation and condonement are no longer appropriate in a credit-based system because they are in conflict with one of its central precepts; namely, that credit should only be awarded for assessed outcomes that have been successfully achieved. This is often referred to as the 'full achievement model'. In practice it has already been noted that at module level it is necessary to achieve all of the outcomes before credit is awarded. So in the case of a degree programme the total number of outcomes that have to be achieved is the sum of the number of outcomes in each module of the programme. Lets take an example where the full achievement model is used. The QAA suggest the volume of credit for an honours degree is 360 points. If there are 3 stages then one programme model would be 10 – 12 credit modules per stage. If we assume that the average number of learning outcomes is 3 per module then the total number of learning outcomes per stage is $10 \times 3 = 30$ and for the programme itself 90. This represents 90 hurdles which the student must overcome in order to gain the programme award. Of course, on route to achieving this number of outcomes, if the student fails one outcome, in say a module that has 4 outcomes, then the normal process is that the credit for the whole module is lost unless the failed outcome can be redeemed.

As previously stated over assessment is an easy trap to fall into in modular programmes and it is quite possible that many programmes will have in excess of 100 learning outcomes. Up until now compensation and condonement regulations have enabled students to progress or gain awards where otherwise they may have been required to redeem referrals, or at worst would have failed. The maintenance of academic standards is of paramount importance and compensation or condonement could easily compromise standards. Outcomes based assessment is also developing in the USA where Angelo [11] stated "It is unnecessary to assess the performance of each student to know engineering graduates from a particular programme are generally developing the attributes of an ideal engineering graduate. Stated another way, we should not confuse the ability of the engineering education community to articulate a vision for the ideal graduate as a mandate for every graduate of every engineering programme to demonstrate competence and proficiency in every attribute. Each goal is a yardstick against which to measure programme success, not an item on a check list to inventory failure". This statement suggests that a degree of compensation is acceptable.

Specialist degree programmes, unlike Combined Subject programmes (CSP), have a substantial core element and therefore there will be core modules and hence core outcomes. It is difficult to build up a case to defend any compensation or condonement of core outcomes. It is also difficult to defend variations in practice which allow undergraduate programme awards to be given for differing volumes of credit. If the full achievement model is implemented and credit is only awarded for a module when all the module learning outcomes have been achieved, it is anticipated that the number of referrals will increase.

A new way forward for the award of credit

The challenge is to implement the full achievement model without running the risk of increasing referrals. One simple method would be to increase the number of modules studied as is often the case where condonement is used but the output standard of 120 credit points is maintained for each stage of the degree. When considering the top down approach it is easy to get into the frame of mind that modularity allows the programme to be divided into parts (modules) which assist delivery and offer the advantages described in the first section. To some extent the division of the programme into modules can be viewed as forming artificial barriers, which should in any case be

broken down by programme themes and integrating elements to ensure the overall programme is coherent and the generic outcomes are achievable.

There is general agreement that a programme award is based upon the accumulation of the requisite credit. The majority of programmes have their curriculum divided into stages and modules which certainly has advantages in terms of flexibility and delivery but since stages and modules are both really artificial barriers there is no need to link them with assessment as in the present practices i.e. the successful completion of modules and progression regulations. The number of modules from which the credit can be gained is subject to considerable variation e.g. Derby utilises 8 modules per stage whilst others feature 10 or 12. Further complexity exists where there are half or double modules. Stages are really only applicable to full-time students and although 3 is typical for an honours degree at present this would reduce to 2 in 'accelerated' degrees. Although assessment boards are needed to ratify assessment decisions the need for progression rules is questioned and now are the subject of considerable debate in many universities. Although credit is awarded for the achievement of learning outcomes it is only awarded, at present, when all of the outcomes in a module are achieved. This means, for example, if one outcome in a module is failed the loss to the student is the credit for the whole module, i.e. 12 points where the stage model is 10 X 12 credits, unless the outcome is redeemed. There is normally a grading penalty when the outcome is subsequently achieved.

There appears no logical reasoning as to why modularity should directly affect the amount of credit awarded. This is the case however, because of the traditional approach to assessment in modular programmes. There is therefore, a case to link credit directly to outcomes. At present within the Derby CAMS scheme students may study the equivalent of 9 standard modules in a stage but only require credit from 8 giving a total of 120 points. Now take the student who has failed one learning outcome out of 3 in each of 3 modules. They will receive a total credit of 90 points (6 x 15) and would need to redeem 30 points (2 x 15) to complete the requirements at the level. Now in the case of directly awarding credit to outcomes the student would gain (6X15) + (3X10) = 120 credits therefore satisfying the level requirement thus allowing progression without referral. The difference to the student and the saving on resources is considerable. For example he/she can concentrate on their next level studies without the hindrance of referrals. The time and expense in setting referred work would be minimised. The student would under these circumstances still hold a creditable and coherent set of outcomes. There would however need to be safeguards in specialist programmes and the nomination of a number of core outcomes which the student must achieve before the overall award can be obtained. Notice I initially refer to 'stage' but laterly 'level' to avoid the barrier imposed by the former. There will of course be pre-requisite requirements for some modules which may limit study at the next level.

The requirement to study the equivalent of nine standard modules in each stage therefore will provide a degree of insurance which should allow the majority of students to gain the necessary credit at each level although core requirements will have an influence. Of course not all modules will have 3 equally weighted outcomes. The number of outcomes may vary between, say, 2 and 4 and may not be equally weighted although the variation in weighting should be quite small given that learning outcomes are of fundamental importance to the programme (notice I have not said to a module). Computerised record systems should be able to handle the credit data even with variations in the number of learning outcomes and respective weightings.

A typical undergraduate study programme employing credit based on outcomes is shown in Fig.1. The equivalent of nine modules are studied at each level but the credit equivalent of eight modules is required which must include the core modules marked with a 'C'. Modules 4 and 14 have 3 equally weighted outcomes but only 2 outcomes have been achieved. Module 16 has 1 of 2 achieved and module 22 has 1 of 4 achieved. The credit at each level and overall is satisfied and therefore this performance would qualify for the award.

Conclusions

Modularisation is here to stay so the obvious question is whether awarding credit for a fraction of a module would be acceptable at all levels in the institution. There is no doubt that computerised record systems are sufficiently advanced nowadays to cope with recording credit at sub module level and calculating overall credit. The first stumbling block is whether or not module designers would except a situation where students could progress or receive an award if in a module(s) studied not all the outcomes are achieved. In essence this may be regarded as a degree of compensation where progression or an award is allowed where students gain the total credit required. This total credit would of course need to include any core credit but the additional credit required may be made up from a specific number of learning outcomes gained from an array of non-core modules. Module leaders may see this as the thin end of the wedge where effectively students gain credit but do not necessarily complete the module satisfactorily.

A reduction in the number of referrals is a convincing argument to implement such a model but alternative referral systems to those used at present are being debated by many institutions. The statement by Angelo [11] should be taken seriously as the majority of existing regulations allow an unacceptable level of referral and failure. There therefore must be a better way forward to awarding credit but I cannot see the new model being accepted at university academic board level whilst we are entrenched in thinking that curriculum design is dominated by the concept of modularity as opposed to a holistic approach in which the generic skills of a programme are of paramount importance.

Fig.1 Outcomes based credit – typical example

Module	Status	Level	Credit	Credit Awarded
1	C	1	15	15
2	C	1	15	15
3	C	1	15	15
4	P	1	15	10
5	P	1	15	15
6	P	1	15	11.25
7	P	1	15	15
8	P	1	15	15
9	P	1	15	11.25
10	C	2	15	15
11	C	2	15	15
12	C	2	15	15
13	P	2	15	15
14	P	2	15	10
15	P	2	15	15
16	P	2	15	7.5
17	P	2	15	15
18	P	2	15	15
19	C	3	30	30
20	P	3	15	15
21	P	3	15	15
22	P	3	15	3.75
23	P	3	15	15
24	P	3	15	15
25	P	3	15	15
26	P	3	15	15

Level	Award Credit	Credit Gained
1	120	122.5
2	120	122.5
3	120	123.75
Award total	360	368.75

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