

Principles and strategies for embedding reflection on learning within vanguard courses

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In order to encourage students to be responsible learners, it is important that they are given opportunities to reflect on how they are going about their learning and how they might improve. Providing such opportunities helps students to realise that any poor performances, or stress they are experiencing in relation to their learning, can potentially be resolved by more effective study strategies. Without this awareness students may react to study difficulties by developing negative views about themselves as learners (such as thinking that they are not bright enough to succeed) which may then result in lowered motivation for their studies. There is evidence in the research literature that providing students with structured opportunities to develop their skill in learning can result in better academic performance (Hattie, Biggs and Purdie, 1996; more references to follow). Embedding such support within subject areas, rather than providing generic support, is ideal (Hattie, Biggs and Purdie, 1996).

This document provides some suggested principles to underpin the embedding of study skills guidance within courses. The principles are followed by a list of practical strategies, which are intended to be straightforward to implement without taking up too much class time. This is a work in progress, comments and questions are very welcome.

Principles

1) Tell students explicitly about the need to reflect on and develop their study strategies

It's a very common pattern for students to carry on studying as they've always done in the past until something goes wrong. Ideally we'd like student to think ahead about the new demands that might be made by their courses and how they would adapt.

2) Encourage active study strategies

In general active study strategies, which are aimed at developing understanding, are more effective than passive rote learning. So it's helpful to encourage students to use study strategies such as: condensing and reorganising the content of their notes; looking for inter connections between ideas; checking evidence; or practising solving problems. Study strategies to avoid include things like copying out lecture notes word for word or rote memorisation of disconnected details.

3) Value diversity in study strategies

Successful students do not all study in the same way. Being given prescriptive advice about study strategies can be disconcerting if a student feels they are being asked to work in a way that will not suit them. It's important that students are offered a range of strategies for consideration and that they are prompted to reflect on whether any new approach is working.

4) Try to encourage students to have positive views about themselves as learners

Students' views about their abilities as learners can be quite fragile as they make the transition to university. It is therefore important to emphasis that –

- reflection on learning strategies is valuable for all, it's not remediation for 'problem students'

- seemingly silly mistakes (such as running out of time during revision) are very common, even among students who end up being highly successful
- struggling with academic work from time to time does not imply that a student lacks ability, it is a normal part of the process
- even serious problems, such as failed exams, can be resolved with changes in study strategies

5) Consider additional support at times of transition

Study problems often take place when there is a transition in the demands placed on students. New responsibilities, new teaching methods and new assessment demands can all cause problems. Encouraging students to reflect on how they will respond to new demands can help avoid the problem of students carrying on as usual until something goes wrong.

6) Encourage monitoring and planning

Many student study problems arise as a result of a lack of forward planning. Embedding opportunities for students to plan how they will manage their studies over the course of a semester or year is important. If this is supported and modeled in the early years then students will develop the skills to allow them to take more responsibility in later years. If students are left completely to their own devices in terms of planning some will find that this is too much responsibility too soon and will then have serious difficulty catching up with their work and rebuilding their confidence. This will be a particular issue for students who have had all of this planning done for them prior to university.

Similarly, some students are not very good at monitoring their study progress and let problems build up until they are in a position that's difficult to retrieve. This can relate to students being used to having teachers provide all the opportunities they need to test their progress and then not appreciating the need to do some of this independently at university. So it's worth training student to think about how to evaluate their own progress, as this is a skill that will really contribute to responsible learning.

7) Try to identify and challenge misconceptions

Study problems also result from students having misconceptions about the nature of university learning and of what is expected in academic tasks. Such misconceptions can be quite resistant to change and written guidance may not suffice to resolve them. That being the case, any opportunities students can be given to surface and discuss their beliefs are very valuable.

Strategies

1) In any room full of students there will be a set of good ideas about study strategies

One simple way to help students develop their study strategies is to encourage structured discussion about possible study methods. This can be done in lots of different ways but one possibility would be –

i) About three or four weeks before the exam weeks ask students to write notes individually under a set of headings (e.g. Have you done an exam like this one before? If so, what went well and what was tricky? What have you learned from that experience? If it's a completely new type of exam, what do you think might be challenging about it?). (5 minutes)

ii) Get the students to discuss what they've written in small groups (5 minutes)

iii) Give each group a large piece of poster paper and ask them to develop a poster logging all of the possible strategies they can think of that would help them do well on the upcoming exam. Emphasise that it doesn't matter if they think the strategies will definitely work, the idea is just to log possibilities. Members of staff to circulate and discuss posters with the students (20 minutes)

iv) Each small group briefly reports on their posters to the whole group. Members of staff chip in with comments (10 minutes)

If you think the above would take up too much time, replace steps (c) and (d) with a 10 minute whole group discussion.

Another variant on this strategy would work well at the start of a second semester course –

i) Get the students to write notes individually under headings (e.g. Looking back on the last semester what went well in your studies and what was more difficult? What have you learned from that for this semester? What are you still puzzled about?)

ii) Students share their answers in small groups.

iii) The whole group discusses the questions.

2) Using clickers to encourage students to reflect on ways of learning?

I think clicker questions might be a good way to help students to reflect on their ways of learning and I'd be very interested to have feedback from anyone who tries this. Below are some possible questions, they will need to be edited to suit specific courses. Most of them don't have a right answer, they're more intended as prompts for discussion or for comment by teaching staff.

i) Which of these kinds of exam errors do you think was the most common on the [*insert name of course*] exam last year?

a) Not answering the question that was actually asked.

b) Not showing the marker how the answer to the question was reached.

c) Running out of time and therefore messing up the later parts of the paper.

d) Making errors in units of measurement.

ii) Which of these kinds of errors do you think was the most common when the [*name of course work assessment*] was completed last year?

a) Not answering the question that was actually asked.

b) *Insert example*

c) *Insert example*

d) *Insert example*

iii) Approximately how much time did you spend on your studies last week (include class time, time spent working on assessments and other study time). [*You may need to give students a bit of time to add this up, they probably won't know the answer immediately*].

- a) Less than 15 hours in total.
- b) 15 to 25 hours.
- c) 26 to 35 hours.
- d) 36 to 45 hours.
- e) More than 45 hours.

iv) Which do you think is the most useful out of this list of revision strategies?

- a) Copying out your lecture notes word for word.
- b) Condensing and reorganising your lecture notes.
- c) Reading over a set of lecture notes and then testing yourself on the content.
- d) Working through your lecture notes to check for areas you don't understand and then finding out about those.

v) Which do you think is the most useful out of this list of revision strategies?

- a) Practising past exam questions under exam conditions.
- b) Practising past exam questions in your own time with your notes out.
- c) Practising past exam questions in your own time but without looking at any notes or other sources of help.
- d) Practising old tutorial questions.

vi) Which do you think is the most important way to use past papers?

- a) Look at them before you start revising, so that you know how to focus your revision.
- b) Practise questions regularly during revision to test whether you are revising effectively.
- c) Leave them till a couple of days before the exam then practise intensively.
- d) Don't look at them, it makes you nervous and interferes with your revision.

3) Case study discussions

Giving students a case study to discuss can help them to engage with a study issue without making it too personal. Below is a case study I've used successfully in the past. The idea is that the students fill in the questions individually first, then discuss them in small groups, then there is a whole group discussion.

Case Study 3 – Dave

Dave has been at university for a few weeks studying Biological Sciences. He's got a couple of school friends on the same course so they've decided to rent a flat together instead of staying in halls of residence. None of them have lived away from home before so they're enjoying the freedom to have parties and to go out whenever they feel like it. Dave plays guitar in a band with some friends and meets up with them to practice a couple of times a week, he also has a part-time job for 10 hours per week working in a music shop.

At school Dave worked pretty hard in his classes but he was not always that good at getting his homework done. He left his revision for his exams a bit late but managed to get enough done to get the grades he wanted. Since he's been at university Dave has turned up for most of his classes, although he's missed a few early morning lectures. So far the only assessments he's had to do have been a couple of lab reports, so it feels like he's got a lot of free time. It's 8 weeks till the Christmas holidays and the assessments Dave will have to complete before then are show below, along with his weekly timetable.

- A 1500 word essay due in 3 weeks time, which counts for 25% of the mark for one course
- 2 practical write-ups due in 3 and 4 weeks time, which each count for 5% of the mark for one course
- 1 practical write-up due in 6 weeks time, which counts for 10% of the mark for one course
- 1 multiple choice exam in eight weeks time, which counts for 15% of the mark for one course

	Monday	Tuesday	Wednesday	Thursday	Friday
9am – 10am	Lecture				
10am – 11am		Lecture	Lecture	Lecture	Practical
11am – 12pm	Lecture		Tutorial	Lecture	Practical
12pm – 1pm					Practical
1pm – 2pm	Practical	Tutorial			
2pm – 3pm	Practical	Lecture			Lecture
3pm – 4pm	Practical			Tutorial	

Please answer the following questions –

1) How many hours per week do you think it would be reasonable for Dave to spend on his studies in addition to attending his classes? *(You can then multiply this figure by eight to work out how much time he's got for his studies until the Christmas break).*

2) What strengths do you think Dave brings to his studies?

3) What sorts of difficulties do you think Dave might run into with his studies?

4) What advice would you give Dave about managing his studies up until Christmas?

4) Postgraduate tutors as a resource

i) If a course has postgraduate tutors then they are a great resource as they have been successful undergraduate students in the recent past. If your tutors can talk with undergraduates about their own study strategies and why those worked for them this may be very helpful for inexperienced undergraduates. There may be things about learning and study at university which are very obvious for these tutors but which new undergraduates will not have considered. If this suggestion is being actioned then please bear in mind principles (3) and (4) above.

ii) Another possibility would be to have each postgraduate tutor on a course type up their top three tips for academic success and then collate these and post them on WebCT. It would be important here that the tutors explain *why* their tips are important – it's the underlying thinking that is particularly useful.

5) Building up a resource based on input from students

The study adviser at St Andrews University has an essay competition every year where students are invited to write about learning at university. Why not ask the second year students on a course to enter a competition to write on one of the topics below and then post the best entries on WebCT for this year's undergraduates. The prize would have to be tempting enough to attract a lot of entries.

i) If you had a brother or sister starting the same degree programme as you this year, what advice would you give them about how to be a successful student? Please explain *why* you would give that advice.

ii) Now that you've had a year's experience of being a university student, what aspects of your studies do you think you tackled well? Why was your approach to these aspects successful? Also, what mistakes did you make and what have you learned from them.

6) Getting students to think aloud about study strategies or problem solving strategies

One suggestion that I've found helpful in my study advising work is to send students off to talk to another student who is doing a bit better than them on the course, or on a particular assignment. It seems to be particularly fruitful to talk with someone who is doing just a little better than you are (as opposed to a postgraduate tutor or member of staff who is more distant in their level of understanding). I suggest to students that they ask their peer to sit with some study materials or problems and to think aloud about how they would approach them. The key point here is to get at the underlying thinking behind the strategy. It's also important to remind students that they don't need to study in exactly the same way as their peers but rather they could evaluate which aspects of their peers' approaches would work for them. I think this sort of activity could be very effective as part of a tutorial and it needn't take too long, 20 minutes would be enough to make progress. The focus could even be one of the tasks that has been set for the tutorial. The tricky thing would be to set up small groups within the tutorials which each had some more successful students in them. Rather than identifying some students as weaker it might be better to approach some of the more successful students before the tutorial and ask if they would mind talking through their approach for the benefit of other students.

7) Project planning tools

I've heard that some subject areas (such as engineering) make use of project planning tools. I wonder whether these might be adapted to help students plan their studies? This would seem very relevant for the students and would achieve several goals at the same time.