21st Century Managers and Intuition: Evaluating the learning achieved from an Example of Pedagogic Change for Business Undergraduates

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Abstract
A key requirement for effective research on pedagogy and course redesign is a credible measure (or measures) of student learning on completion of individual modules or even specific teaching initiatives. This has proved difficult to achieve for business courses for some subjects - in particular for the teaching of soft skills such as team working. Traditional methods such as examinations are inappropriate.

This paper reports on a novel approach to the evaluation of an exercise, designed to develop business students' skill of managerial intuition. Changing business conditions are placing a greater value on managers' ability to deal with open-ended complex (wicked) problems. One academic stream of work has identified that managerial intuition is the key to handling such problems effectively. This, like all skills, can best be acquired through practice. An exercise designed to give small teams of students experience of such a problem was designed for a module delivered during the 1st year of a business degree at Business SchoolX. In parallel students were required to carry out both team and individual reflections that focused on the learning achieved on this exercise. Since the reflective practice was required and marked this ensured that we obtained a comprehensive response from almost all students on the course. Reflective practice can be anonymised and draws on an individual's most deeply held thinking. This year (2015/16) is the first attempt at carrying out an evaluation exercise of this type. The paper reports on the preliminary results from the Autumn Term module.

Key words: wicked problems**,** managerial intuition, evaluation of learning, student self-evaluation, reflective practice, dérive

1 Introduction

A key requirement for effective research on pedagogy and course redesign is a credible measure (or measures) of student learning on completion of a module or course. This has proved difficult to achieve.

Researchers in the discipline of teaching and learning face unusual characteristics that affect all aspects of the research process – methodology, data collection and analysis. Much of Business research tends to focus on investigating existing situations in organisations with a view to establishing first what is happening, and then to develop and/or test causal theories linking actions (such as installing new equipment or changing routines) to outcomes in terms of the operation of the organisation or product/service outputs. For teachers it is the need to evaluate the effect of new teaching initiatives that is a major challenge. These will probably be based on aspects of the developing subject of learning theory. What is wanted is an answer to the question as to whether the intended outcomes in learning taught by the new initiative have been met. The fundamental concern is the learning achieved by the individual student and then perhaps the implications of these results for the theory underpinning the new initiative. The teaching of soft skills such as team working and managerial intuition is an example. Traditional evaluation measures such as examinations are not suited to evaluating student learning.

This paper makes the case for Student Reflective Practice as an evaluation tool for teaching initiatives that aim to develop the soft skills. It reports on a novel approach to the evaluation of an exercise

designed to develop business students' skill of managerial intuition, using reflective practice. Hence it involves the data collection and analysis stages of the research process.

The next section reviews current evaluation methods in general use. Section 3 reviews the literature on Reflective Practice to establish its effectiveness as a learning and evaluation tool. Section 4 describes the theory underpinning the design of the teaching initiative. Section 5 describes the teaching initiative and the new approach to evaluation of learning adopted. Section 6 presents some preliminary results of the evaluation of the 2015/16 cohort.

2 Ways of evaluating the learning achieved from new teaching initiatives

There are a number of different ways to measure the effectiveness of higher education. Surveys of students set out to provide a measure of students' satisfaction with their experience. Yorke (2009) extensively discusses the limitations of such surveys and particularly of the UK National Student Survey. While there are significant methodological differences between the approaches adopted in different countries, there are many such surveys around the world (Langan et al, 2013). Measures of student satisfaction form an important component of comparative ratings of universities and of courses – for instance 'league tables' published in the national press. Nevertheless student satisfaction is only one element, albeit an important one, in the success or otherwise of a student's time at university.

A second measure is student success in coursework and examinations. Within a university there are limitations in using this, especially where lecturers set their own assessments, but in the particular case of activities that constitute part of students' transition to university it is legitimate to measure their impact on academic attainment later in their course.

A third approach is to identify very specific results that students should aim for, and measure whether these have been achieved. Such results could include a tangible change in approaches to learning and studying (Richardson, 2011), for example progressing from taking a superficial approach sufficient for studying at secondary school, to adopting the more critical and reflective approach expected from university students. Gibbs (2010) advocates measures of learning quality which set out to recognise 'educational gain' and infers that it is important to evaluate educational process: is it appropriate for the discipline being studied and the cohort of students?

A challenge for innovative teaching is to find a way to evaluate particular initiatives (Henard, 2010). Factors which might indicate success of a particular initiative could include student engagement, which itself is very hard to measure, the commitment and resources provided at an institutional level, and tangible measures such as student retention and progression. If the initiative is being applied as part of the revision of a course, as is the case described in this paper, there is no effective control group of students who share the same educational experience as those being studied, but do not participate in the initiative. We are proposing RP as a method that can be used for supporting both student learning and evaluation

3 Reflective Practice as a learning and evaluation tool for new teaching initiatives

Theories of learning within higher education place a considerable emphasis on achieving deep learning (Prosser and Trigwell, 1999) and there are close parallels between reflective practice and the process within which students internalise complex knowledge. Lecturers are encouraged to draw on Schön's (1983) concepts as part of their development as educators (Gibbs and Coffey, 2004), both by reflecting on their own practice and by fostering a reflective mindset among students. Boud et al (1985: 19) define reflection in learning as 'those intellectual and affective activities in which individuals engage to explore their experiences in order to lead to new understandings and appreciations'. To this end

they formulate a model in which the reflective process mediates between experience and outcomes. Their process includes returning to the experience that prompted the reflection, and re-evaluating it. Moon (2004) offers practical guidance on the inclusion of reflection in learning, and among other points stresses that reflection can be most effective in an informal context.

For students the first year of university is a time of new intellectual experiences: compared to school they are adopting new approaches to study, and are very often studying a new discipline. They need to be able to rationalise these new experiences in a way that leads to effective learning outcomes. At the same time, effective reflection is a tool used by lecturers to evaluate the effectiveness of the learning process. Lecturers' learning outcomes would relate to a critical consideration of what had been achieved, which could help to determine what approaches to teaching and learning could be used in the future.

Hinett (2002) has a focus on legal education and on professional development, but nevertheless includes a range of examples, including one regarding personal development within a management course. She emphasises the importance of setting out clearly the purpose of including reflective practice within a course, and of relating it to learning outcomes, while at the same time acknowledging the difficulty in evaluating whether students have truly been reflective. McGregor (2011) makes the case for reflective practice, and indeed for applying intuitive approaches to dealing with problems, in a chapter more immediately aimed at an audience setting out to teach in schools. But the argument for deep reflection on educators' own practices applies equally in higher education

4 Managerial intuition

Managerial intuition is but one of a wide range of business skills that are being introduced to students on the BSc(BS) degree at Business School X. The use of managerial intuition for decision making stands in stark contrast to the rational decision making based on the analytical methods developed by business schools during the 20 century. The exercise of managerial intuition is the exercise of personal judgement, based on a lifetime of experience. It involves a form of information processing that differs sharply from rational, analytical processes. Dane and Pratt (2007) provide the following definition - "intuitions are affectively charged judgments arising through rapid, nonconscious, and holistic associations". It seems to be a process by which we recognize patterns among disparate stimuli drawing on deeply buried, unconscious knowledge based on our experiences and incorporating emotional factors. This manifests in conscious awareness as a "gut feeling."

Managers need these skills when faced with complex problems for which there is no simple answer. Rittel and Webber, (1973) labelled these as 'wicked problems'. In contrast to tame problems (Conklin, 2006), wicked problems are unique, cannot be modelled, are tough to describe and have no right solution. As Rittel and Weber (1973, p 120) note "the classical paradigm of science and engineering... is not applicable." The problem situation is open ended and 'fuzzy' so that we can never be sure that the information of relevance to the problem solution has been identified (let alone found). It involves a high level of uncertainty. Any action taken to resolve the perceived problem will change the environment significantly (Grint, 2008) and change the nature of the problem itself (Camillus, 2008). There are no precedents and the sources of the problem may be deep rooted (Camillus, 2008). Faced with these type of problems our best outcome is to find a temporary decision for an action that works at the specific time, place and context (Grint, 2008). The most promising approaches developed to date for obtaining workable solutions to these type of problems, involve harnessing the personal judgements - the managerial intuition- of a group of personnel with the relevant skills, specialist

expertise, experience, range of world views and methods of enquiry (Grint, 2008; Brown, Harris & Russell, 2010).

Skills are learnt through practice. It takes time and effort to first acquire and then develop a skill to a high level of expertise. Dreyfus and Dreyfus (1988) capture this process with their five level skill acquisition model - novice, advanced beginner, competent performer, proficient performer and expert. Initially for the lower levels of skill, the performer relies on well understood routines to develop his or her skill. It is at the higher levels that the performer's own experience becomes important. It is the design of the exercises that can take a performer through the lower levels to that of expert, which is the challenge.

Sadler-Smith and Burke (2009) in discussing the nature of managerial intuition have presented a set of practical methods for supporting the development of these skills. We draw on their ideas to develop a framework for teaching managerial intuition. We suggest that there are four different types of learning that students need–

1. An awareness, understanding and acceptance of the important role that intuition and judgment play in many managerial (and life) situations. (The important role of intuition)
2. An understanding of individual personal thinking processes so that they can articulate how they arrived at an action or particular decision. Some of the questions they need to be able to answer include: What mental models were used? How did their emotions play a part in the process? How wide did they take the problem (how many aspects and/or stakeholder views did they take into consideration)? What biases affected their judgments? How did their own as opposed to the company values affect the decision? (Understanding the personal thinking processes involved in using Intuition effectively)
3. An understanding of how to integrate these skills into normal decision making and problem solving techniques and being able to recognise when it is appropriate to use intuition. (Recognising how and when to use intuition)
4. The development of personal tools and methods for evaluating the level of personal skill achieved. (Evaluation of personal skills of intuition)

Table 1 (below) presents our proposals, based on these ideas, for how to support learning these skills.

Table 1: Creating the conditions for learning the skills of managerial intuition (based on Sadler-Smith and Burke, 2009)

Type of learning students require for the effective exercise of intuition	**Creating the conditions in which learning can occur**
1 The important role of Intuition.	'Dispel the myth' that intuition is mystical. Activities include: the use of well documented case examples of effective use of intuition.
2 Understanding the personal thinking processes involved in using Intuition effectively.	Arrange opportunities for students to gain practical experience of taking decisions or to make use of their own personal life activities. Examples include: internships, practical case work, placements, field work for organisations, shadowing, simulations.

3 Recognizing How and When to use Intuition	Require that students reflect on these experiences – both the process and the outcome. Methods proposed include: personal journals (Taggart, 1997, cited in Sadler-Smith and Burke, 2009) visual imagery – to capture the holistic view, cognitive mapping, analysis of reviewing potential biases.
4 Evaluation of personal skills of Intuition	Provide appropriate Feedback. This can come from a variety of sources including tutors, peers and class mates, guest speakers. The quality of the feedback will of course depend critically on the understanding of the responders.

This is one of the key concepts that underpin the design of the new module, MPS.

5 Teaching the skills of managerial intuition – one type of initiative

As part of a redesign of the undergraduate degree at Business School X, a new core double module "Management Practice and Skills" (MPS), was introduced in 2011/12 academic year for the new 1st year intake to be taught in the Autumn term. One of the learning aims was the development of managerial intuition.

The structure combines a weekly two hour lecture with a two hour tutorial delivered to parallel small tutor groups of twenty students (organised into teams of five). By the current academic year 2015/16 (the 5th) the module had evolved to include a major additional component that addressed student personal development – that of individual and team reflective practice.

It is the tutorial sessions in which students are expected to develop their business skills, through exercises and three team coursework projects. Although all three team coursework projects provide practical experience of wicked problems, it is the second team project (the dérive) that specifically targets the development of the skills of managerial intuition. The following subsection describes this assignment.

5.1 The Dérive student team project

The dérive is one that we have developed over a period of several years, but deliberately made a centre-piece of the MPS module. This was developed by the French Situationist, Guy Debord (1955): "One of the basic situationist practices is the *dérive* [literally: "drifting"], a technique of rapid passage through varied ambiances. Dérives involve playful-constructive behaviour and awareness of psychogeographical effects, and are thus quite different from the classic notions of journey or stroll." Our version of the dérive involves teams spending several hours walking/drifting in a zone of the City of London, with a deliberately open ended (fuzzy) task such as "Our zone: Uncover its hidden business and management story". This is a task with few right or wrong answers (wicked problem), and therefore is an appropriate method for addressing ill-structured problems, and for developing observational, noticing and related pattern finding skills. It also helps provide a different type of team working, being carried out in an ever-changing physical environment (not around a table), with scope for quite different viewpoints and arguments, not just finding a single correct solution. It tests the ability to deal with an unfamiliar and open ended problem based in the real physical world. It emphasises insight and deep thinking about a few things, rather than just accumulating facts and figures. This assignment puts the team leader (if there was one) into a similar position of leaders with a wicked problem, as identified by Grint (2008). An unanticipated side effect reported by teams was that the experience brought the team to learn about itself in a way not achieved in any other task and in many cases threw it into a productive "storming" stage of Tuckman's 4 Stage Model (Buchanan &

Huczynski, 2010). Teams report back orally on their experiences and are marked on the quality of their team presentation and the coherence and insight shown on the task (the story of their zone).

The project is run over two of the middle weeks of the term. In the first week of the project the teams use the time in the workshop to plan the project and to organize their team members (week 4 workshop). The team has the following two weeks in which to carry out their 'walk', agree the story of their zone and prepare their presentation which is given in the workshop of week 6 to the their tutor and the other 3 teams of their group. This presentation must include a team reflection on the process and effectiveness of their management of the project as well as their ideas on their zone.

The learning objectives are wide ranging, including; Application of OB theory on team working & motivation; Application of the 4 tasks of management theory; practical experience in dealing with a 'wicked' management problem; introduction to the skills required for handling ill-structured problems (Senior Management skills); development of the skills of team working, critical reflection, presentation, managerial intuition, project management (task organisation) and time management.

Over the two week period, both assignment designer and tutors give verbal formative feedback to the teams on the task (tutorial class time is given for this). The whole teaching team and student peers offer formative feedback and help through the Moodle Q&A forum as questions on the task are raised. For the presentations, each team offers verbal formative feedback to one of its peers on both task performance and quality of presentations. This is followed by a tutor- led class discussion on the same subjects. Written summative feedback and marks is given by the tutors. A debriefing of the work done by the whole cohort is also given by the management lecturer (in the lecture session).

5.2 Implementing Reflective Practice within the MPS module

Individual Reflective Practice coursework was introduced to the MPS module in the academic year 2014/15 as an aide to student's learning. A member of staff teaching this module, made the process more transparent by developing a framework with three distinct levels of reflection – that of Note Taking, Basic Reflection and Deep Reflection (Reflective Workbook, 2015). Table 2 shows the type of comments that is appropriate at each level, for the various activities that students are likely to carry out while at university. However the coursework requirements set for students proved too vague and hence implementation was patchy.

Table 2: The steps in developing deep reflections

Student activity	**Note Taking**	**Basic Reflection**	**Deep Reflection**
Lecture	Taking notes of the details given in the lecture	Student opinion of the lecture – content and delivery	Interchange of speaker and audience; development of student's own new ideas as a result; new personal insights
Walking/ Travelling	Notes on & photos of exactly what is seen	Reading the notes to work out what is new knowledge &/or ideas learnt	Using the basic things learnt to develop ideas and insights that are worth communicating to others. May be of unique value to you and which may even be original.
Brain-storming	Write down key ideas presented	Organise ideas/data and present in a new way (chart, table etc)	Refining the table, diagram or drawing to evolve a much more highly refined representative of knowledge compared to the initial notes and basic reflection
Reading/ searching	Read texts; make notes on	Reading the notes to work out what is new	Connecting the new learning with all previous personal knowledge and

	content; cut and paste	knowledge &/or ideas learnt	experience, leading to new insights and deeper understanding
Conver-sation	Recording or note taking of interviews &/or general conversations	Analysing the recording &/or notes to work out what is new knowledge &/or ideas learnt	Systematically review the new ideas and knowledge developed in the basic reflection in order to develop deeper insights and understanding
Everyday	Making a note of events	After the event(s) analysing the notes and what happened to evaluate the significance	After a sequence of events or days or a significant exercise, explicitly sitting down, perhaps with others and creating a bigger pattern, a picture of personal lessons learnt

For this academic year (2015/16) the requirements were specified exactly. All students were issued with a hardcopy Reflective workbook which explained the three levels. The books contained an empty double page for each week of the course arranged for the three levels of comment. An exercise on reflective practice was carried out by the class in the first workshop. Students were required to reflect on and write up self-chosen significant events or aspects of each week's activities (both lecture and workshop) on the three levels, starting in week 2 and finishing in week 9. The formal requirement for marking purposes was that each student submitted his or her deep reflection for each of these eight weeks on moodle within a strict time limit of a day after the week's activities (the lecture and workshop) had been completed. The coursework assignment was to complete the eight submissions. Students have been marked individually on these submissions as a whole for completeness (all eight reflections), timeliness (meeting the deadline) and quality (deep reflection). For some weeks the tutors made suggestions of ideas for student's to reflect on. Arguably it was the addition of this assignment which completed the set of student activities that Sadler-Smith and Burke (2009) considered necessary for developing the skills of managerial intuition.

Table 3: Creating the conditions for learning the skills of managerial intuition (based on Sadler-Smith and Burke, 2009) - the dérive assignment in the MPS module

Type of learning students require for the effective exercise of intuition	**Activities developed on the MPS module with respect to the dérive project aimed at creating the conditions in which learning can occur**
1 The important role of Intuition.	Personal experiences of lectures and tutors applying intuition. Case examples of situations requiring intuitive action discussed in lectures and classes.
2 Understanding the personal thinking processes involved in using Intuition effectively.	Provision of practical experience: the dérive is a challenging practical team project with an open ended assignment.
3 Recognizing How and When to use Intuition	Team reflections on the management of the team and it's performance on the dérive. Tutorials: Individual Reflective work books; weekly notes on deep reflection; Directed questions on personal responses to the module and the dérive
4 Evaluation of personal skills of Intuition	From tutor written and verbal feedback, from class mates and tutor discussions in class and from lecturers in debriefing of the dérive

5.3 Evaluating the learning achieved

While the reflective practice coursework was introduced originally as a way to enhance individual student learning, it became clear that the work recorded on Moodle also offered a new type of feedback from the students on their depth of learning (as well as their satisfaction or otherwise with the various elements of the course). With this assignment we have enhanced the development of the skills of managerial intuition (see table 3) and obtained an unusual type of feedback on the dérive project. Special questions were set for the whole cohort in week 4 (the start of the derive project) and week 6 (the completion of the derive project) which targeted the concept of open-ended problems.

The deep reflections of the individual coursework for the module are required from all students and with them we should obtain a comprehensive response (targeted on the question of interest, that of the learning achieved from the dérive project) from the cohort as a whole.

Reflective practice should be a superior method to obtain student's evaluation of their own development. It taps into their deepest understanding (unlike standard university surveys of student's satisfaction with the module). It offers more than other well-known methods such as interviews and focus groups, which all suffer from two drawbacks – the sample is a biased one drawing on only student's that feel strongly enough to contribute and each interviewee gives their views publically.

6 Preliminary analysis of the deep reflections from the 2015/16 cohort of BS students

We have 198 students on this module for the academic year 2015/16. These were distributed between 11 groups (most of 20 students but a few groups had only 15). We have analysed the reflections of one group of 20 in some depth. The intention is to analyse the remaining 10 groups in a similar way. However the groups were selected to contain a representative group of students so it is reasonable to assume that this group's responses are a good guide to the class as a whole.

For the group chosen, the approach taken was to focus on the reflections written for weeks 4 to 9 as this is the period in which we can expect comments about the dérive project.

Each student was required to write a deep reflection of up to 400 words for each of eight weeks. If a student completed all eight weeks deep reflections we can expect approximately 3200 words per student. For the period in which we are interested (the last 6 weeks) we can expect up to 2400 words per student. In fact student's varied widely as to the number of words submitted, with most exceeding the 400 words to a significant degree.

The level of response on the subject of open-ended problems and/or the dérive was extra-ordinarily high. Of the 20 students in this group, 2 dropped out early submitting few reflections overall, the remaining 18 submitted a large body of work with 16 students devoting a considerable amount of their reflections to the dérive/open-ended problems (on average just under 50% of the 6 weeks reflections for the group as a whole included material referring to this topic). No other approach would have elicited feedback from such a high proportion of the class. From this response, it was clear that this teaching initiative had had a significant impact.

What sort of effect had it achieved? To answer that question we needed to analyse the type and quality of the statements made that were relevant to the dérive project.

From an analysis of the reflections the following themes emerged

- Description of Open ended problem/ wicked problem
- Positive attitude to the importance of learning about such problems exhibited in most reflections

- Assessment of the team's handling of the task both positive and negative points, including both project management and task handling
- Individual Personal responses to the challenge both positive and negative
- Team working. This was a team project and the importance of effective team working was identified in almost all reflections.
- Team working – how the team developed over the period of the project – problems and their management, changes in working practice agreed, assessment of team performance
- Team working – the special characteristics needed for leadership when team faces an open-ended problem
- Presentation of ideas on how to handle wicked problems when met in the future
- Personal Learning achieved from the dérive project

Students varied considerably on the range of themes they chose to discuss. With no responses from 2 of the group we can assume that these students learnt little. But the responses from the remaining 18 establishes that the majority of students felt that they had been through a significant learning experience. There is a wealth of information contained in these reflections which lack of space does not allow us to analyse in greater depth at this time.

7 Conclusions

This case example shows that student deep reflection directed at the learning achieved from a teaching initiative, has the potential to provide valuable evidence as to the impact of the initiative. To be effective, reflection must be incorporated in the course design as part of the required coursework. But although we still fail to obtain feedback (and evidence) from the uncommitted students, nonetheless it appears we can expect a serious thoughtful response from the majority.

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