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Using reflection to improve distance learning course delivery: a case study of teaching a management information systems course

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ABSTRACT

Past research has considered the reflective practices of the teacher as an important activity in the learning cycle. Some of it has introduced the term 'reflective teacher', showing that such practice has become increasingly important.

This paper discusses literature related to various means of collecting feedback from students, the socio-technical approach to management information systems (MISs) and reflective models. It documents the reflective practices that the author followed while teaching an MIS distance education course.

The findings of this research show that actively reflecting on feedback collected from students could improve teaching quality and lead to better understanding for students in future cohorts.

KEYWORDS

Distance education; feedback; learning cycle; management information systems; reflection; reflective teaching

Introduction

The important role of collecting feedback from students and reflecting on such feedback in the learning cycle has been discussed and agreed upon across a large body of literature. Challenges faced in teaching distance education courses, such as the large number of students and the diversity of their backgrounds, dictate the use of more customised support for students, and using reflection for such support becomes extremely important (Biggs & Tang, 2011; Gravells, 2009; Hummel, 1997; Hwang & Arbaugh, 2009; Kolb, 1999, 2014).

Considering the current state of technology-enabled learning, using a single form or survey to obtain feedback from students is not sufficient. Teachers should embrace different and innovative means of collecting feedback from their students and reflect on it to improve the quality of their teaching.

This paper presents a study on course enhancement by using reflection on feedback collected from students. The study focuses on three main areas of study, by taking a management information systems (MIS) course as an example:

- means of collecting feedback from students

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- a socio-technical approach to MIS
- reflective models.

The study was conducted following the teaching of an MIS course for first-year business-management students in one of Saudi Arabia's major universities.

Review of related studies

This part of the study will discuss related sections on a socio-technical approach to information systems, existing practices of collecting feedback from students and available reflective teaching models.

Socio-technical approach to information systems

Laudon and Laudon (2012) suggest that contemporary approaches to the design of information systems should focus not only on the technical approach to information systems design, 'which emphasizes mathematically based models to study information systems, as well as the physical technologies and formal capabilities of these systems' (p. 61), but should also consider its behavioural approach, which represents an important component of any information system. Behavioural issues of information systems that may arise during the time of their design and implementation are important. Issues such as strategic business integration, utilisation and management of information systems cannot be addressed by dealing with only models of the technical approach, in isolation from the behavioural discipline's concepts and methods; indeed, the teaching in MIS courses emphasises the *socio-technical* approach to information systems – i.e. the successful implementation of an information system must consider both its behavioural aspects and its social aspects. (Some of these related concepts are illustrated in Tables 1 and 2.) This socio-technical approach is what distinguishes the study of MISs from that of other fields of information systems, such as computer science, and failure to follow it thus contributes to many of the negative issues experienced in the implementation of information systems, such as resistance to new systems.

Table 1. Sciences used in a socio-technical approach to information systems, constructed from data in Laudon and Laudon (2012, p. 61).

Sciences related to a technical approach to information systems	Sciences related to a behavioural approach to information systems
• Computer science • Management science • Operation research	• Sociology studies • Psychology studies • Economics studies

Table 2. Socio-technical perspective of an organisation, constructed from data in Laudon and Laudon (2012, p. 113).

Social definition of an organisation	Technical definition of an organisation
'An organization is a collection of rights, privileges, obligations and responsibilities that is delicately balanced over a period of time through conflict and conflict resolution'.	'An organization is a stable, formal social structure that takes resources from the environment and processes them to produce outputs'.

As far as the organisation of a system is concerned, Chai and Qi (2015) note that 'The term "socio-technical" was used to investigate the interrelationship between the social system and the technical system of an organization. While the social system takes into account the processes, tasks and technologies to produce designated output, the technical system focusses on the relationship among people and their attributes' (p. 1134).

Collecting feedback from students

Ypsilandis (2002) advocates that collecting feedback from students and reflecting on such feedback can facilitate evaluation of teaching, particularly in regard to the syllabus, the teaching methods chosen and the learning process itself. Student surveys are one of the traditional means of obtaining learners' feedback, via structured questions. The author noted, in his own experience with traditional classroom environments, that response rates for such online surveys are relatively low when no direct contact is made with students – a scenario quite difficult with a large number of distance-education students. In their 2008 research study, Dailin, Fengyan, Shuangxu and Fenglong used various techniques to improve response rates for their survey of graduating students, including conducting a survey soon after graduation (i.e. the timing of the survey), offering giveaway items and explaining the benefits of completing the questionnaires to both graduates and their employers. This approach appears to have paid back in terms of a high response rate from the targeted population. The maturity of the students participating in the survey could also have played an important factor, in that it could re-emphasise that students need to be sure that the feedback they give will not be ignored and that action will be taken as a result of their responses.

Meanwhile, in her study of a group of Russian students, Nazarenko (2015) observed that collaboration through discussion forums – which are considered one of the most important collaboration tools in online learning – could be hindered by students' lack of IT skills.

Boyle and Nicol (2003) discuss the innovative system of obtaining immediate student feedback during class, which in their study was implemented by the engineering department at the University of Strathclyde and uses a classroom communication system (CCS) named PRS. They found that 'the structure of PRS sessions around questions and answers provided benefits over conventional lectures; it made it possible for teachers to get immediate feedback about student difficulties and to reflect on the effectiveness of teaching while it was in progress' (Boyle & Nicol, 2003, p. 10). As noted by the author, however, it is debatable whether this is the most effective use of technology in a traditional class or if it is rather a form best utilised in distance-learning mode, as the structure of the lecture has drastically changed. Indeed, Svinicki (2001) discussed the downside of collecting feedback from students in the traditional way of using surveys, noting that reasons for student demotivation when dealing with such surveys centre around their lack of faith in the response received, their fear of being targeted because of negative feedback and, most important, their lack of knowledge about how to give proper feedback. Svinicki's study favours open-ended questions compared to scaled ones, but student demotivation may result in a lack of feedback

for such an enquiry (Svinicki, 2001). However, having large size classes would complicate the process of obtaining feedback from students. The author suggests, therefore, that using innovative means of interaction with students is a valuable approach, as obtaining feedback is not easy in a distance-learning environment, and numerous studies refer to a lack of student motivation in the learning activities presented within online forums. Some suggestions have been made to address this issue, such as professors being available to communicate with students online (Bath & Bourke, 1997; Lim, Morris, & Kupritz, 2015).

Reflective teaching models

Theorists in the field of education have discussed the role of reflection in the teaching cycle (Biggs & Tang, 2011; Gibbs, 1988; Gravells, 2009; Kolb, 1999; Machin, Hindmarch, Murray, & Richardson, 2016; Rivers, Richardson, & Price, 2014), many noting how reflection and feedback processes are correlated, particularly Biggs and Tang (2011) in their discussion of reflective teaching. They observe that one rare skill of a successful teacher is his ability to collect feedback from learners and to use this feedback to reflect on his own practice in order to improve his teaching. Machin et al. (2016, p. 20), meanwhile, specify that reflection and evaluation practices require the application of four types of 'reflection lenses', as defined by Brookfield (2012): self-reflection, feedback from colleagues, learners' feedback and one based on 'theoretical literature'.

Kolb's (1999, pp. 2–3) experiential learning theory (ELT) model comprises four modes of two dialectically related pairs:

- grasping experience – namely, Concrete Experience (CE) and Abstract Conceptualization (AC)
- transforming experience – Reflective Observation (RO) and Active Experimentation (AE).

For the ELT to achieve its goals of deep learning in a student-centred mode, the learner is expected to go through the four modes of ELT in a cyclic manner and each experience gained should be used to seek new knowledge and experience. Reflective Observation mode attempts to answer questions such as: What worked? What failed? Why did the situation arise? Why did others and I behave the way we did? (Kolb, Kolb, Passarelli, & Sharma, 2014).

Gibbs's (1988) reflective model (as cited in Brown, 2017; Gaynor, 2013) proposes a series of stages that need to be followed in order to come to thoughtful and deeper reflections: description, feelings, evaluation, analysis, conclusions and an action plan. This model allows for reflection untainted by feelings and emotions by guiding teachers gradually and slowly towards a conclusion through slowing down their thought processes. The process starts by requiring teachers to first describe each situation without coming to any sort of judgement, then to describe their feelings about the situation, evaluate the situation in a more objective way, analyse the situation, reach a conclusion about the experience and, finally, draw up an action plan for any similar type of experience that they might encounter.

In fact, Gibbs's (1988) reflective model shares some characteristics of the four reflective lenses of Brookfield (2012) – for example, in the analysis phase of his model, Gibbs recommends bringing ideas outside of one's own experience by involving 'colleagues and peers in your reflections, but also to consult literature and theories in order to make sense of what happened' (pp. 20, 21).

Rivers, Richardson and Price (2014, p. 214), meanwhile, emphasise the importance of what they refer to as the 'reflective relationship' between teacher and student, and observe how this relationship can facilitate reflective learning. They discuss the central role that reflection plays in teachers' professional development and point out that higher-education institutions are now embedding reflective practices in their curricula.

Context

Higher education in Saudi Arabia is closely monitored by the Ministry of Education (MoE), which encourages scientific research across all universities. The ministry does, however, allow universities autonomy in areas of quality management, which is overseen by a government-operated, universities-independent body. This practice does not differ significantly from Western universities, and indeed external quality reviewers are appointed from Western universities and quality-management firms to assess and accredit Saudi universities. In addition to the national accrediting standards, the Saudi MoE encourages universities to seek international accreditations such as AACSB and ABET (Ministry of Education [MoE], 2018).

This paper explains how reflection on feedback collected from the students in a distance-learning mode was used to improve the quality of teaching. The course under study is the MIS course offered to first-year distance-learning students on a BA in Business Administration. The students enrolled were of diverse national and regional origins. Though the overwhelming majority were working students, others chose the course because of personal circumstances such as medical conditions, family commitments and the unavailability of traditional classroom-based courses. The exact numbers of men and women who subscribed to the course over several semesters and years are shown in Table 3.

Table 3. Demographics and statistical data for students enrolled in the King Faisal University MIS distance-education course (2015–2017).

Year and semester of study	Number of students	Gender
First semester – Year 2015	3560	Male
	3591	Female
Second semester – Year 2015	1607	Male
	781	Female
First semester – Year 2016	3504	Male
	1683	Female
Second semester – Year 2016	4555	Male
	1575	Female
First semester – Year 2017	6416	Male
	3607	Female

Findings

This part of the paper discusses research findings as they relate to the feedback collection methodology used, and how Gibbs's (1988) reflective model has been utilised to document the reflective practices followed during course delivery.

Feedback collection methodology

Different means of collecting feedback from students were used during the teaching of the MIS course, as follows:

- **Collecting feedback by email**. This method was found to be effective, as students were able to raise concerns and questions by sending an email to their professor at their own pace and the professor then had some time to respond to these concerns.
- **Collecting feedback by phone calls**. This was found to be the least effective means of communication for two reasons: the students were unable to remain anonymous, and most calls were conducted too close to the exam date.
- **Collecting feedback via discussion forums**. The benefits received from this method were found to be minimal, as very few students were involved in these forums.
- **Collecting feedback via direct messaging during direct lectures**. The lectures delivered in the distance-education model used by the university differ greatly from those delivered in a traditional classroom environment. In the online model used by the university, learners and professor engage in a form of synchronous collaboration using internet technology. The university's distance-education department organises and announces an online meeting with students, where students can listen to their professor, then follow up by asking them questions and receiving an immediate response. This method of teaching provides a rare opportunity for participants to give feedback on their learning process, course content and delivery. As a feedback collection method, it was found to be effective and efficient, considering the large numbers of students enrolled on the course.

The feedback received from students using the above methods centred around their attempts to understand the relationships between different parts of the course and their need to differentiate between the terms used throughout the course. A great many questions were related to students trying to understand the relationship between the technical aspects of systems, particularly information systems, and how these related to their social aspects.

Using Gibbs's reflective model to document the reflective practices followed during course delivery

During this study, several reflective models were examined in order to establish a theoretical framework for documenting the author's reflective practice. Of the models

discussed, the author believes that Gibbs' reflective model represents a generic model that can be applied to all teachers' reflective practices. The other models, discussed earlier, are either specific to a particular mode of education (e.g. Kolb's experiential learning theory (1999)) or are targeting reflective practices to be followed primarily by students. The model used in this study – as depicted in Figure 1 – combines the practices followed in the MIS course with the different stages of Gibbs's reflective model. Figure 1 shows how the model was used to document the author's experience with reflective practices.

Description stage

The students undertaking the MIS course complained that the course materials delivered to them as recorded lectures were confusing in many ways, that there was duplication in those materials and that the material was full of similar terminologies with different interpretations. It was also noted over several semesters that students were asking for a reduction in the amount of material they had to revise for the exam.

Feelings stage

The author believes that student feedback can be quite constructive and could help to improve course content and teaching practices, and that teachers should work first to identify any shortfalls in these areas.

Evaluation stage

Students' complaints appear to make sense, as they share common themes.

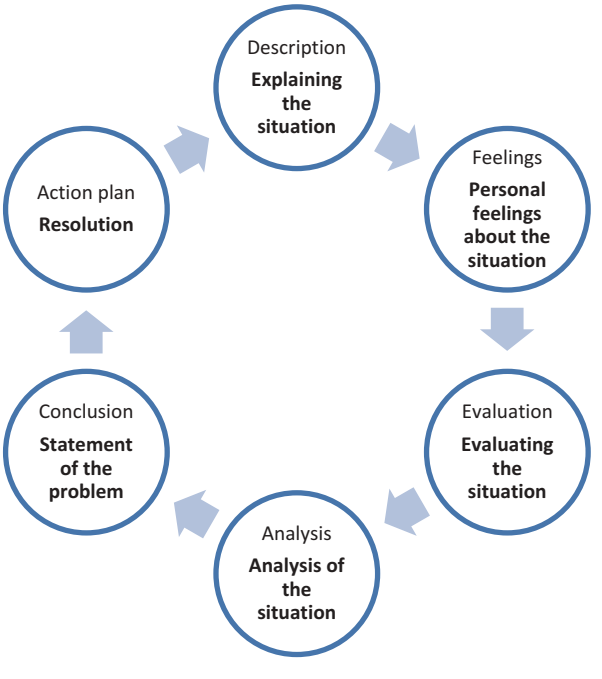

Figure 1. Documenting a reflective teaching experience using Gibbs's reflective cycle.

Analysis stage

To better analyse the situation, the author referred to the MIS course textbook and the developed course material, as well as the teaching philosophy recommended by the textbook, then asked colleagues who were teaching the same course in a traditional classroom environment if their students had similar complaints. Collecting feedback from students, as detailed in the previous sections, also helped at this stage.

Conclusion stage

Though the socio-technical approach concept of information systems and organisation was explained to students in the recorded lectures at the beginning of the course, it was not well received by them. This led to complaints from students that the course has redundant parts and that many of the terminologies used were confusing and ambiguous. In a course based on a distance-education model, where most of the lectures are pre-recorded, rather than traditional teaching, where a lecturer enjoys face-to-face communication with students, adjusting students' understanding of the subject matter becomes more challenging. For example, the MIS course textbook discusses how the concepts of technical and social approaches apply to both organisations in general and information systems in particular. In addition, the course discusses the concept of systems, information systems and MIS, and in this case a clear line needs to be drawn to convey the relationships between those terms to make them clear to an entry-level undergraduate student.

Personal action plan stage

In response to these problems, the author considered ways of addressing issues communicated via students' feedback. It was clear that two related issues had to be addressed in order to improve the course content and the quality of teaching:

- explaining to students the relationships between terminologies in the social part of the course, compared to the technical part
- explaining to students that there was no redundancy or over-teaching, and that in fact all the course materials were essential and related in one way or another.

The challenge was to use direct-lecture methods on this distance-learning course, which comprises four 30-min direct lectures, without changing the actual course content on which the assessment part of the course is based. Below are some of the techniques used to help students better understand the course materials:

- **Using compare and contrast**. This technique was used to explain the differences between related terms in the social and technical parts of the course, branches of science associated with each approach were explained. Comparisons were drawn between systems, information systems and MIS; between components of *systems* as opposed to those of *information systems*; and between information *systems* and information *technology* and their components.
- **Using graphical representation**. This was used to link different parts of the course that were not related in the original course materials.

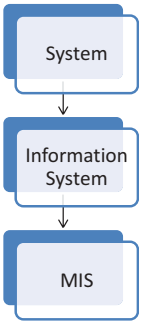

Figure 2. Graphical representation of the relationships between system, information system and management information system.

Figure 2 illustrates how the terms 'system', 'information system' and 'management information system' are related. The overarching term 'system' could refer to any type of system such as a legal system, university system or information system, which are all considered *subsystems*. MIS, in turn, are considered subsystems of information systems.

Conclusion

Over the course of this study, the author noted that having a large number of students in an online class can hinder efforts to collect feedback from them, but that using technology can facilitate communication. The author also noted how little the students used the collaboration systems available to them, preferring instead to engage in one-to-one communication in the form of emails or instant messaging during direct lectures, for example.

The author suggests that it is helpful to follow the learning cycle in the distance-education mode of teaching and learning by collecting feedback from students and reflecting on one's teaching experience in order to implement improvements in this experience in the future. After applying changes to the course materials following feedback from a previous cohort of students, the feedback from the new batch of students indicated that they were better able to remember what had been communicated during direct lectures while writing their exam, and that they were able to recognise how important it is to highlight the areas covered in such lectures. In addition to this, the students' responses received during direct lectures and emails were mostly positive, indicating that they appreciated the actions that had been taken and that they had a better understanding of and renewed interest in the course. The author also felt satisfied by being able to follow the learning cycle to address learners' needs and improve the quality of teaching.

Based on the author's experience, it is believed that distance-education teachers and lecturers should consider applying reflective practices to their own teaching. Documenting the reflective practices following a known reflective teaching model helps to relate theory to practice and improves the quality of reflection and actions to follow.

Disclosure statement

No potential conflict of interest was reported by the author.

Notes on contributor

Dr. Adil Fathelrahman has over 30 years' experience in the information systems field, in both industry and academia, enriched with other skills in leadership, program and curriculum design, research, and quality assurance. He has worked in major IT companies including IBM UK and Logica UK. His areas of interest include, but are not limited to, the fields of application and data integration, IT service management, e-business technologies, and teaching methods and strategies for information technology discipline. He has taught courses in IT service management, enterprise architecture, systems analysis and design, e-business, and decision support systems at both undergraduate and postgraduate levels. Dr. Adil Fathelrahman received both his MPhil and PhD in the field of e-business from the University of Bolton, UK.

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