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Implementing Academagogy: The First Case Study

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Abstract: *As proposed in McAuliffe, Winter, Chadwick and Hargreaves (2008), academagogy could be used as an “umbrella” term allowing the teacher to select from a range of teaching approaches – pedagogy (teacher as source of all information to student without power or knowledge), andragogy (teacher as source of information for adult student), or heutagogy (student with knowledge seeking information from teacher to fill the gaps in their own knowledge). During Semester 1, 2009, one of the authors of this paper decided to treat his third-year students in a more heutagogical manner by allowing them to experience ownership of their own learning. This article is a case study of that experience which reveals that, although initially more time-consuming, academagogy can result in better student outcomes.*

Introduction

Many theories on teaching and learning in the adult learning context “...are constantly being reviewed and discussed in professional education, especially in terms of the university educational environment. Teaching and learning theories in this concept are not static and appear to be in a constant developmental process” (McAuliffe, Winter, Hargreaves and Chadwick, 2008). We propose that educational institutions, such as universities, are serious about undertaking various moves toward improving the quality of teaching and learning, especially in undergraduate education.

Academagogy (McAuliffe et al, 2008) is a learning theory based upon pedagogy, andragogy and heutagogy. However, rather than it being a fixed model – a ‘one size fits all’ approach - that adheres to rigid ‘rules, it is implemented as a process that allows for, and indeed facilitates, the learning based upon the cohort of the student. This new approach of the process of teaching and learning is explained following an outline of the more mainstream principles of teaching and learning. A case study of the implementation of academagogy is discussed in depth, and then potential applications of the theory are discussed for future development.

Towards a new theory on teaching and learning: Academagogy

As educational theories advance, educators are attempting to move towards more effective learning techniques than pedagogy (teacher-centred teaching), such as andragogy (student-centred teaching) and heutagogy (self-determined learning).

As “pedagogy” literally means “leading the boy”, and “andragogy” means “leading the man”, we have followed the same Greek roots to reach “academagogy” or “scholarly leading” (McAuliffe *et al.*, 2008, Knowles, 1980; Hase & Kenyon, 2000; Stephenson, 1994; Argyris & Schon, 1996; Emery & Trist, 1965). The primary aim of academagogy is to open up teaching concepts, and allow the informed academic to apply what works for them in their own context. This means that the facilitator, or, in the university context, the lecturer, could select certain concepts from the “buffet” of educational concepts – take what is required for the appropriate learning outcomes, because they have permission to look at the whole spread and evaluate it for their own purposes.

Whilst academagogy allows for flexibility in teaching, using a variety of tried and true methods, it also encourages the theories of pedagogy, andragogy and heutagogy to feed back into this “meshed” model. This model may be better to utilise across diverse cultural and generational backgrounds, varying disciplinary backgrounds (such as those within engineering disciplines versus those in a humanities discipline), and students’ prior knowledge. When teaching undergraduate students, academics do not simply deliver the content to a tabula rasa; they teach students the content, therefore a variety of student characteristics affect the way that learning occurs.

Implementing Academagogy

In Semester 1, 2009, one of the authors decided to use his third-year stress analysis unit of almost 100 students as an experiment in implementing academagogy. He began by looking at the history of the unit – student outcomes and learning, and found that the final exam showed limited retention of knowledge. Students were passing the unit based on quizzes and assignments, with 40% failing the final exam. Student evaluations of the unit consistently showed that the teaching was too fast and covered too much content.

The first lecture put the onus of learning back on the students by discussing the results of previous semesters in relation to learning and outcomes. As previous iterations of the unit indicated that although all the necessary content was taught, the results of previous assessment items (including the final exam) indicated that the students were not retaining the knowledge imparted to them throughout the semester. Therefore, the lecturer decided to take a radical approach by discussing this issue with the students and proposing that a new approach was necessary in order for them to learn, retain the knowledge and be able to *understand the theory* behind the principles rather than simply knowing *how to do* the equation. The discussion was then taken to a new and drastic approach by asking the students “how do you want to learn?”

However, rather than simply leaving the students with this question without some direction, the lecturer offered a change of approaches that could assist them in their learning and retention of knowledge. After some discussion the final proposal was that:

- The students were to read the textbook in order to understand the basic principles, with a set chapter to be read each week
- The salient points (a summary only) could then be covered in the lecture
- The remainder of lecture time would be spent working through problems (the lecturer models and the students practice).

The student reaction to this proposal was mixed – some wanted the traditional form of ‘chalk and talk’ pedagogy while others were willing to experiment and see if the new approach may make a difference to their learning and retention of knowledge. After further discussion the whole class agreed to trial the new approach.

First steps in academagogy

Following the agreement of the class, each week the lecturer looked at the unit's workplan and the textbook, and developed a new approach for that class, drawing on the simpler examples that they should already have been familiar with. Worked examples on the whiteboard (rather than traditional PowerPoint slides) were used, and these were summarised before moving on to tutorial problems. The lecturer also made clear to the class why the specific tutorial problems had been selected – in some cases to refresh memories and provide revision, in others to encourage them to use the textbook as a learning resource. This proved relatively successful for the first few weeks, where the student engagement and responses in lectures was higher than in previous years, however, over the course of the weeks appeared to decrease.

During the first third of the semester, the lecturer also reminded the students each week that he was seeking their feedback on the new academagogic approach. One student commented that the way the lecturer was explaining and illustrating the work made it easier to understand. Another commented that “reading the book first was a big help”. However, by week three, when the lecturer asked whether everyone was reading the textbook, there was a unanimous “no” from the class. Despite this, the lecturer tried to maintain explorations of how, why, and how to apply the theories/formulae rather than teaching the content that was covered in the textbook.

Over the course of the semester, the lecturer was constantly reflecting on the process, both from his personal perspective as the lecturer, as well as how the students were responding to this new approach. It was about half-way through the semester that the lecturer observed that:

They want pedagogy. They want many worked examples. They do not want to do an extra work (learning) outside the lecture. They do not necessarily want to learn they but they want a successful outcome to the unit; i.e. good grades. They do not necessarily want to contribute to learning but they do want me to show them how to solve problems. I don't think I understand what they require of me or the learning yet.

Finding our feet with academagogy

The second part of the semester proved to be a turning point in this new academagogic approach. In the lecture in week five, the lecturer ran a feedback session by distributing Post-It notes to the class and asking them to write what he was doing right, what could be improved upon, and whether they were doing the reading. The results of this feedback were rather predictable, as the lecturer had observed that the set discussion forums were basically inactive and the decreasing engagement within the lecture indicated that many students were not reading the set chapters for each week. Although every student in the lecture theatre had the opportunity to give anonymous written feedback, approximately one third of the class responded.

- Generally, they were happy with the lectures, and found the worked problems useful, but felt it was very fast-paced.
- About two-thirds of the respondents found the textbook too difficult, and had stopped reading it after the first couple of weeks.
- The students also wanted longer tutorial times, possibly because the tutors were still working to a ‘chalk and talk (pedagogical) model.

Based on this feedback, it appeared that reducing the content, increasing the number of worked examples and changing the text may have beneficial effects to the students learning. It was at this point that the lecturer discovered that there was need for refinement, so where possible, changes were

implemented for the current semester and proposed changes were noted for future iterations of the unit.

As it was too far into the semester, most students had already purchased the text and the unit content was based around the main principles within the text, it was deemed that it should not be changed at this late date but every effort was made to try an experiment for the following lecture. They were asked to read the notes before the lecture and bring with them any questions. It was anticipated that this may make the student engagement more interactive

As the timetabling for the unit had been organised well before the beginning of the semester it was not possible to extend the time of the tutorials, but it was considered a viable option for the following year. For the current semester, by reviewing the main topics, the lecturer identified a way to integrate them and merge the lecture and tutorials, making the lecture longer so more time could be spent on practice/worked examples.

The following week, based on these changes and having supplied the students with notes for the next section of the course, the student feedback was that approximately half the class had read the notes and the majority of students found the notes to be useful and more easily understood than the text. The majority of the students indicated that they would prefer notes written by the lecturer in place of the text.

Getting our balance with academagogy

In the final weeks of semester, the response to questions was somewhat improved, perhaps due to time spent on reflecting on the previous weeks' work, thus refreshing the students memories and highlighted the salient points of the previous weeks. The overall lecture-tutorial also appeared to have been more successful and engaged the students, with the focus being much more on questions and answers and whiteboard work using actual problems to draw out the intricacies of the analyses.

When the final examination and assessment sheet were discussed, this encouraged a rather robust and animated response, with many suggestions and comments coming from the students. (This may highlight a potential investigation regarding the students being assessment driven rather than interest in learning for learning's sake). However, an agreement was reached about both the exam and the assessment sheet, whereby it was agreed that the exam would contain a total of seven questions, of which the students have to complete four. The assessment sheet was modified to give a greater spread of potential results. This was well accepted by students, but a significant number of students still wanted to be marked by the traditional approach of marks out of 100.

Outcomes

Implementing academagogy was quite time consuming for the lecturer because of the need to tailor the delivery to the students requirements (which will very likely change from semester to semester). However, it was felt that, in the final exam, this approach was successful. On the other hand, there still remained several difficulties, including a need to encourage the students to read the text (producing comprehensive notes for future iterations of the unit may be a solution).

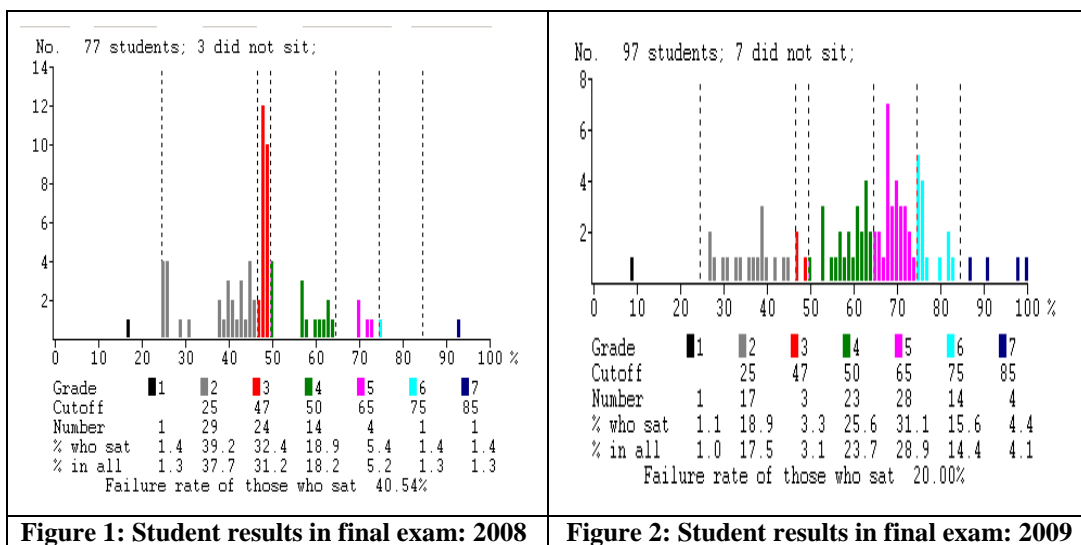
The performance in the final exam was exceptional and differed considerably from previous years. Table 1 below indicates the difference in terms of overall student results, showing that more students achieving a higher grade both in the unit overall as well as in the final exam. The overall failure rate

decreased 7.08%. Figures 1 and 2 show graphically the spread of results for the final examination in 2008 and 2009.

	Grades – Final Examination				Grades – Overall Assessment			
	1 - 2	3	4 - 5	6 - 7	1 - 2	3	4 - 5	6 - 7
2007	57.1	7.1	19.6	16.1	4.6	1.5	70.8	23.1
2008	40.5	32.4	24.3	2.8	10.5	2.6	75.0	11.9
2009	20.0	3.3	56.7	20.0	3.5	1.2	54.0	41.3

Grades: 1-2 = fail; 3 = conceded pass (2007 and 2008)/ fail (2009); 4-5 = pass; 6-7 = distinction

Table 1: Student outcomes for Stress Analysis unit – 2007-2009



There was a remarkable difference in the reduction of failure rate in the final exam: 20.54%.

In addition to these improvements in student results, the student evaluations of the unit also showed a statistically significant improvement in ratings for the question “I received helpful feedback on my learning”. While there were not enough responses in either 2008 or 2009 to make the data statistically significant at the whole-of-Faculty level, the comments in 2009 were positive about the new teaching style and format: “*The layout of the unit was really good, as were the presentation of the lectures. Asking for student feedback on how the lectures should be run is also a great idea*” and “*The notes that were sent out before each lecture for the last few lectures were a great help.*” The comments about aspects of the unit needing improvement also changed, from being largely about the amount of content and the speed of delivery in 2008: “*Need summary notes on topics studied within this subject*” to being predominantly about the textbook in 2009: “*The textbook needs improvement, the contents aren’t easy and not really straightforward*”.

The lecturer’s reflection on this final outcome was that:

These initiatives (the supply of notes, changing the delivery to a more “chalk and talk” style, doing more examples, supplying sample exam questions and giving more selection in the final exam) had the desired effect. For example, the failure rate has decreased.

On the other hand maybe this is just spoon-feeding and the learning was more just repeating what had been seen – is that learning? This really needs to be investigated.

Overall:

- *A monumental amount of effort by me was required to prepare material to cater for the class needs.*
- *The necessity to develop a whole new regime of presentation of the material without the back-up of the PowerPoint presentation was very demanding and stressful.*
- *The frequent request for feedback from the class with respect to “how can I improve this” was disappointing in terms of I didn’t really get much, unless the good performance in the final exam is an indication of how well it went.*
- *The student evaluation response in terms of scores for me was very good and the comments were encouraging. Unfortunately the response was poor at 16%, but this was higher than in previous years.*
- *Was it worth it? Well, I am pursuing the same style of approach in my current unit so – yes.*

Conclusion

Academagogy is not a “pick and mix” of other “gogies”, but rather a tailoring to the students’ needs – and this will need to change according to the cohort of students and their own learning experiences. Although the workload was significantly increased for the lecturer, the implementation of this philosophical approach to one unit in the third year led to an increased response rate by students in student evaluation of unit and teaching, positive comments by students about the approach and a decreased failure rate (both in the final examination and the overall unit results). An increased number of students obtaining grades of 6 and 7 (on a seven-point scale) as well as grades of 4 and 5 were evident, as was improved lecturer/student interaction within the lecture/tutorial context. Further implementation of the academagogical approach is currently underway within undergraduate engineering. Evidence suggests that although there have been challenges, the transition forward from traditional comfortable transmission modes in educational practice into the more challenging realms of student centered ownership of learning is creating a new culture within engineering education both for facilitators, lecturers and students.

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