Creative Approaches to Teaching Difficult Content

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Abstract

Teaching complex concepts can be discouraging for students and teachers. Students can quickly become disinterested if they find the material hard to understand and often resort to surface learning techniques such as memorization. This is discouraging for a teacher who is attempting to explain difficult content so that students understand it on a deeper level. I was faced with this in my first years of teaching and began reflecting on my teaching practice. The result is an evolution from a traditional lecture approach to a hands-on activity approach where students create a simulated factory in the classroom and use Lego blocks to calculate the cost of their product.
Introduction

Higher education teachers face a variety of challenges in the classroom such as motivating uninterested students, increasing class sizes, and teaching difficult content. Technology is also a common challenge, as students often rely on textbook slides and electronic learning aids as opposed to reading the chapter. Over the years, I have responded to these challenges by reflecting on my teaching practice through my perspective as a teacher and my students’ perspective as learners. As a result, my teaching has evolved from a traditional lecture style to a student-directed activity approach. This paper will discuss this evolution and how it has improved my teaching. By varying my teaching methods, a greater number of learning styles are satisfied and students are provided with a sensory learning experience that mirrors events they may experience in their future careers.

Literature Review

The traditional lecture method of teaching has been referred to as the “banking” approach, where teachers deposit knowledge into their passive students’ empty minds.1 While lecturing is useful with certain topics and some types of learners, students can become lazy if they think everything will be taught to them in class.

Lecturing has also been criticized as creating “teacher-centered” classrooms, as opposed to “student-centered” classrooms or even “subject-centered” classrooms.2 Palmer argues that teaching is improved when teachers create “subject-centered” classrooms, not when a teacher masters an ideal teaching technique. In “subject-

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centered” classrooms, a learning environment is created where the subject is the main focus of attention and both students and their teacher explore the subject together.

Research has also shown that learning improves when students are active participants in a real experience. Hansman describes “context-based learning” as learning that is influenced by the real-life activities that occur during learning as well as the interaction among people in the activity.³ Learning has also been viewed from a sensory perspective, with the idea that learning improves as students use more of their senses in the learning experience.⁴ Taylor and Lamoreaux expanded the knowledge of learning by arguing that learning needs to be associated with a physical experience.⁵ This supports the need for expanding teaching methods beyond traditional lectures to include activities that involve students in the learning experience, using their senses, their experiences, and the experiences of other students and their teacher who share in the learning process.

Various theories have attempted to determine the ideal models for teaching and learning. Pedagogy is a teacher-focused model related to the teaching of children, while andragogy is student-focused and relates to the teaching of adults.⁶ Knowles later revised his definition of andragogy to recognize the fact that the learning situation, not the age of the learner, determines whether a student-focused model or a teacher-focused model is appropriate.⁷ Other learning theories such as self-directed learning and transformative

⁷ Knowles, Holton, and Swanson, The adult learner.
learning have emerged, but there is still no one theory that explains learning. What we have is variety of theories and ideas that explain learning.\(^8\)

This variety of learning theories means that some will be in favour of lecturing, perhaps under certain circumstances. Brookfield argues that lecturing can be done well if it is done with a purpose and outlines several characteristics of good lectures.\(^9\) He explains that students need to understand why teachers are lecturing as opposed to using another teaching method. Brookfield also states that because students will have different preferred learning styles, by varying teaching methods a greater number of learner’s needs are satisfied.\(^10\) Students may even be challenged to expand their skills and grow as learners when presented with the opportunity to learn with a new teaching method.

In order to develop a variety of teaching methods and improve teaching practices, teachers need to critically reflect on their teaching. Brookfield provides teachers with a framework to accomplish this by critically reflecting on their teaching through the perspective of themselves as teachers, their students, their colleagues, and the literature. Teachers who critically reflect on their teaching practice are better able to respond to the challenges they face in their classrooms and their students are rewarded with an improved learning experience.\(^11\)

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\(^11\) Brookfield, *Becoming a Critically Reflective Teacher*. 
Evolving From Lectures To Creative Activities

Initially, my “teacher-focused” classes consisted of lecturing and solving textbook problems on the board. Accounting is a discipline where there is typically one correct answer and students are taught a certain process in order to get that answer. This is especially true in the introductory courses. Judgment and interpretation are important parts of accounting, but these skills are typically left to the advanced courses. While teaching introductory accounting with a traditional lecture method, I noticed certain topics were both difficult for students to understand and uninteresting for me to teach. I focused on one of these difficult topics, Process Costing, and tried to develop a better way to teach it.

Process Costing is a method used to calculate the cost of a product when all units of product are identical. It is widely used across a variety of industries, most notably food processing. An Australian survey reported that 96% of companies surveyed in the food industry used Process Costing. Imagine a food processing company that makes tomato soup. Each can of soup will contain the same amount of raw materials and require the same amount of labour. Each can of soup will also flow through the same series of production departments such as a cooking department and a canning department. Since each can of soup is identical, the company can calculate costs by department and then divide by the number of cans produced in each department to determine the cost of each can. Despite its popularity in industry, it is a difficult topic for students to master.

A move towards a “student-focused” classroom environment began by lecturing less and providing students with aids containing the structure of the answer for weekly

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problems. This consisted of in-class handouts or electronic textbook tools that gave students the appropriate structure to follow when solving a Process Costing problem. It also placed the responsibility on the students to determine the correct answer. This approach offered some improvement in learning as evidenced by test results over a series of terms. However, students were merely successful in solving similar problems with different numbers and still struggled if the material was presented in a different manner. Also, students understood the topics in silos as opposed to being able to link ideas across topics within the course or across courses they had taken previously. Students were successful at memorizing the content, but still did not completely understand it.

Further reflection resulted in the creation of an activity approach that simulates a typical Process Costing question. Students are divided into small groups¹³ and each group is provided with Lego blocks of different shapes, sizes and colours. Each group is then given a couple of minutes to design their product. For example, their product may consist of one large blue block and with two smaller red blocks on top. The groups then have five minutes to create as many identical units of their product as they can. At the end of five minutes, students use Process Costing techniques to calculate the cost of the units of product they created. The Lego blocks are considered raw materials and would have different costs assigned to them depending on their size and colour. Students assign labour costs to their product based on estimated labour rates per minute. Finally, students estimate overhead costs of the classroom such as rent, furniture, and utilities and assign these costs to their product.

¹³ In a class of 60 students there would be 12 groups with 5 students in each group. In larger classes the teacher can ask for volunteers and demonstrate the activity with one group at the front of the classroom.
The results have been positive for the students as learners and myself as their teacher. Exam results on Process Costing questions have improved and students are more interested in the course as evidenced by my teaching evaluations and student comments. Also, I look forward to teaching with my Process Costing activity because I know it will help students to truly understand the topic.

This Process Costing activity has created what Palmer would call a “subject-centered” classroom. By having students use Process Costing to calculate the cost of their product, the subject becomes the focus of the class and the teacher’s role is to guide the students in their learning and understanding of the subject. Also, it supports the ideas of Hansman, Barer-Stein, and Taylor and Lamoreaux as students are learning Process Costing in a real situation where they physically see and touch the product and are therefore more likely to understand how costs are then assigned to it.

My activity also contains elements of andragogy and self-directed learning. One of the assumptions of andragogy is that students learn best when concepts are applied to real situations they may encounter in their future careers. If students understand why they are learning something and how they will use it in the future, they are less likely to merely memorize and then forget it. Also, students have the opportunity during the activity to put themselves in organizational roles according to their future career aspirations. A student who hopes to be in marketing, for example, will gain an appreciation for how much it costs to produce the product that will ultimately influence the price charged for the product. The activity is also self-directed in that students are responsible for designing their product with Lego, estimating raw materials and labour

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14 Palmer, The Courage to Teach.
15 Hansman, “Context Based Adult Learning.”; Barer-Stein and Krompf, The Craft of Teaching Adults.; Taylor and Lamoreaux, Teaching with the Brain in Mind.
costs associated with the product, and finally calculating the cost of their product based on their understanding of Process Costing.

Conclusion

I have not abandoned lecturing, but my classes now include a variety of teaching methods. When I do lecture, it is what Brookfield would describe as purposeful. I explain to students why I am lecturing as opposed to using another teaching method and what they should take away from the lecture. Students are also challenged to link topics across the course or between courses. Even when classes include lectures, students need to have done enough background work before class to be able to benefit from the lecture. In other words, the lecture alone will not teach students everything they need to know.

By reflecting on my teaching practice and experimenting with creative approaches to teaching difficult content, my teaching practice has evolved to include a variety of methods. This benefits students as a greater number of learning styles will be satisfied, and it also creates a more interesting and rewarding teaching experience for the instructor. By varying my teaching to include lecturing, completing problems with students using handouts, and facilitating an activity using Lego blocks, I am continuing to grow and learn as an educator.

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16 Brookfield, *Becoming a Critically Reflective Teacher*. 
Bibliography


