EXPERIENTIAL LEARNING IN COST ACCOUNTING

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INTRODUCTION

Experiential learning is a fancy term for something we all learned as children. As children, we quickly learned not to touch a hot stove. This was learning from experience. Experiential learning is learning from experience. A Chinese proverb, listed as quotation #12,274 in the Columbia World of Quotations also describes experiential learning. Confucius, the Chinese philosopher and reformer, is credited with the proverb, which states: I hear and I forget, I see and I remember, I do and I understand. Experiential learning is learning by doing. Thus, the essence of experiential learning is that experiential learning emphasizes active rather than passive participation on the part of the learner.

RELATED LITERATURE

The question, "What causes learning?" is as old as teaching. The Accounting Education Change Commission "is convinced that an increased emphasis on teaching and curriculum and course development is vital to the future of Accounting Education" and "the importance of effective teaching and innovative curriculum cannot be overemphasized (AECC, 1990, p. 330). Williams (1991, p. 128) wrote, "A major step for reforming accounting curricula is to encourage experimentation and innovation. Experiential learning revolves around experimentation and innovation.

The AECC Objective of Education for Accountants Position Statement number One states that, "The overriding objective of accounting programs should be to teach students to learn on their own. Students must be active participants in the learning process, not passive recipients of information. Learning by doing should be emphasized. Working in groups should be encouraged. Faculty who are effective teachers are those who develop and implement new and innovative approaches to teaching and curriculum design should be recognized and rewarded for such scholarly activities (Sept, 19909, p4). In addition, the Commission notes, "The content of the program must create a base upon which continued learning can be built. A focus on memorization of rules and regulations is contrary to the goal of learning to learn (Sept, 1990, p6).

Many different methods are used to provide learning experiences for students. Baker, et al, (1987) identified six major teaching methods that have been presented in a wide body of education research literature. These are Lecture/discussion, programmed instruction, mastery

learning, problem-centered seminars, lab, workshop, experiential learning, and system analysis. Baker et.al conclude that the optimal teaching method for most accounting courses is the experiential method developed by David Kolb.

David Kolb (1984) developed a model for experiential learning theory that emphasizes, "Experience is translated into concepts, which, in turn, are used as guides in the choice of new experience" (kolb, 1984, p31). According to Kolb, the learner goes through four stages for maximum learning. The phases are: Concrete Experience (CE), Reflective Observation (RO), Abstract Construction (AC), and lastly Active Experimentation (AE). Kolb believed that the learners performance is determined as p=f (ce, ro, ac, ae). The core of his model, noted above, is that experience nets concepts, which nets experimentation and that learning should go through all four phases for maximum learning efficiency.

Though much has been written about experiential learning, little empirical evidence has been gathered and tested in order to determine the statistical significance of experiential learning versus other modes of learning. James E. Stice (1987) used Kolb's learning cycle with engineering students. Stice states that his experience "has confirmed the assertions that students will learn effectively through the application of Kolb's theory (p. 226).

McMullen and Cahoon (1979) encouraged students to identify and conceptualize their experiences through what was called a Personal Application menu (PAM). The PAM's required students to answer questions based on the four learning stages presented by Kolb. Hutchings and Wutzdorff (1988) wrote about the integration and effect of experiential learning at Alverno College. Alverno has adopted the works of Argyris and Schon (1974) and Kolb (1984) to a learning environment that integrates what is termed "knowing and doing".

Agrawal and Siegel (1991) conducted a study to gather empirical evidence to test Kolb's learning theory. The study was small in scope and conducted in a principles of accounting course. The results of their study indicated some statistical evidence that student performance improved through the integration of Kolb's learning cycle. Until recently, this was the only study available providing statistical evidence of the usefulness of Kolb's theory.

Jensen and Agrawal (2003) conducted a study where the primary research questions was whether applying Kolb's experiential learning model in introductory accounting would improve learning of the treatment group. They tested the hypothesis: The mean score of the control group will be equal to or greater than the mean score earned by the treatment group for each exam. Statistical tests revealed a significant difference in the exam scores of the treatment and control groups on all exams.

Jensen and Agrawal state "the motivation for this study was to fill a gap in the literature by providing empirical evidence on the validity of learning theory applications in Accounting…The classes receiving the teaching strategies designed to integrate the theory did significantly better than the classes taught by the traditional lecture format….evidence not previously published in the literature" (p.. 38)

THE ASSIGNMEENT

The assignment requires the student to purchase raw materials, make something out of the materials, keep a journal of cost and experiences, and make a presentation to the class of the results. Thus, the assignment combines elements of experiential learning, oral communications, and written communications. I tell the students I don't want projects such as puzzles or snap/glue together kits. Rather, I want them to start with an idea for a project, buy the raw materials, manufacture the item, and keep a journal of what they did.

Over the years I have made a few modifications to the assignment. For instance, the first semester I made the assignment, many students made cookies and cakes. Since the first semester, students are told the must make something non-perishable. Some students made large items and brought only pictures to class. One of my current requirements is the project must be something small enough to bring to class for presentation.

Students are graded on their oral and written report. This comes as a great relief to many students who at first feared a part of their grade would be on their finished product. I ease their mind by telling them the finished product has nothing to do with their grade on the assignment.

The two main questions are the same each semester: How long does the journal need to be and how much time for the presentation. I tell them the journal should be long enough to detail all their experiences while making the project and tracking the cost. I do not specify a particular length. I tell them the presentation needs to be about 2-3 minutes beginning with the name of their product and the amount of its cost.

Grading the assignment requires a great deal of judgment. I am never 100% sure a student actually made the item. However, by listening to their presentation, reading their journal, and looking at the product, I am able to at least record a grade with some informed judgment. The project is usually worth 25 points and most students, who make something, give the oral presentation, and turn in their journal will get 25 points.

The least expensive project on record is the one where a student took three pipe cleaners and made a stick man. One was for the torso, one for the legs, and one for the arms. His presentation was good and his report was good so he received the max score on his project.

The most expensive was a 12x24 shop building. (This was before I made the requirement for the project to be small enough to demonstrate in class.) The student brought a series of pictures showing from the bare ground, to the foundation, to the walls, to the ceiling, to the roof. He was very knowledgeable of the construction process and based on his presentation and journal he received max credit on his project.

Perhaps the most interesting item was the time a student began his presentation by saying "I made a candle and it cost $235". After the laughter subsided, he explained his wife's

microwave blew up during the heating process and he had to buy her a new one. This particular project generated a great deal of discussion about adding the cost of the microwave to the cost of his one candle.

Perhaps my favorite project to date is the one where the student made "Dancer the Reindeer". This is the project I hand out to students once all the presentations are made. I use it as a good example of the detail that goes into a cost report, both the financial aspect and the written aspect. The project enables us to discuss many concepts dealing with direct and indirect materials, direct and indirect labor, variable and fixed factory overhead and reporting procedures. Complete detail about "Dancer the Reindeer" is included in the appendix.

SUMMARY

The vast majority of the students seem to enjoy this project. Some students I talk with years later tell me the one college project they remember most was the one in cost accounting where they had to make something. I particularly like the project because it has some many learning elements. It has the experiential learning aspect, the oral communications aspect, and the written communications aspect.

One student comment about the project is typical of what many students write. They wrote "I enjoyed the experiential learning assignment. It was very interesting to think about all the different costs that can go into even a simple item. The costs and hands on experience almost made me understand why some people do this stuff for a living as Cost Accountants. (Notice I said almost).

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APPENDIX
DANCER THE REINDEER

DIRECT MATERIALS

$1.36	BEIGE FELT
$0.79	BROWN FELT
$0.10	RED FELT
$0.27	GREEN FELT
$0.56	BLACK BEADS
$0.83	RIBBON CHRISTMAS TREE
$2.50	FIBERFILL
$1.67	AQUARIUM GRAVEL
$1.00	BLUE JEANS
	RED GLITTER
$1.49	GLUE
$0.33	POINSETTIA TRIM
$0.27	CANDY CANE
$11.17	TOTAL DIRECT MATERIALS

LABOR

HOURS	RATE	TOTAL
8.75	$6.00	$52.50

OVERHEAD

??	ELECTRICITY
$0.59	BLACK EMBROIDERY THREAD
$0.59	RED EMBROIDERY THREAD
$0.99	HOT GLUE STICKS
$0.59	BEIGE THREAD
$0.59	BROWN THREAD
$0.59	NAVY THREAD
$1.00	BLUSH
$6.98	PATTERN
$11.92	TOTAL OVERHEAD

COST SUMMARY

DIRECT MATERIALS	$11.17
DIRECT LABOR	$52.50
OVERHEAD	$11.92
TOTAL COST	$75.59

TOOLS USED INCLUDED:
SEWING MACHINE
MINI GLUE GUN
SCISSORS
PINS
NEEDLES
IRON
RULER

I WENT TO WAL-ART. It took me about 1 hour to plan my project and purchase the materials. I immediately came home and got started.

The first step is beginning my project was to trim the pattern with my scissors and to read the instructions. This took 30 minutes.

I ironed the pattern, pinned it to the materials and began the cutting process. There were 4 pieces each for the arms and legs and 2 pieces for the 4 head of which the ears were a part of (in case you were wondering) that were cut from the beige price of plush felt. The antlers included 4 pieces cut from regular brown felt. The nose consisted of 1 round price of red felt. The two pieces for the body and the pocket were cut from an old pair of jeans. The scarf consisted of 2 long pieces cut from green sparkle felt. The cutting process took 1 hour and 30 minutes.

Sewing Process

I first sewed the body pieces together and the filled the bottom with a cup of aquarium grave to help it stand upright. I then proceeded to fill the body with fiberfill, stuffing it to the brim. I turned under the top edge of the body and slipstitched it together. This step took about 35 minutes. I then sewed the head sections together to form the ears. I wrapped thread several times close to the head and tied it off. I then stuffed the head with fiberfill. Next I used the black embroidery thread to hand attach the beads to the head for the eyes, and then hand-stitched the eyebrows and mouth. I hand gathered the red felt circle, stuffed it and tied it off to make the nose. I then glued the nose to the head with the hot glue gun. Next, I glued the head to the body and added a few stitches here and there to secure it. This process took me 2 hours.

Antlers: I stitched the fabric, stuffed the antlers and glued them to the top of the reindeer's head. I applied blush to the inner ears and cheeks. I glued the poinsettia decoration between the antlers. This process took 55 minutes.

I then prepared the decorations on the pocket. I first traced the letters on the pocket and then used red glitter glue to go over the tacking. I set the pocket to the see to let the glue dry overnight. This took 1 hour 15 minutes.

Arms and legs: I stitched each set of two pieces together and stuffed them with the fiberfill. I then glued the arms and legs to the body in their appropriate positions. This took 1 hour and 15 minutes.

I stitched the two green scarf pieces together, punched 4 holes in each end with my scissors. I then inserted and tied off red embroidery thread to make fringe and tied the scarf around the reindeer's neck. This process took about 30 minutes. I then hand stitched the Christmas decoration on the pocket and glued the pocket to the body of the reindeer with the hot glue gun. this took 10
minutes.

Last I placed a candy cane in Dancer's pocket. This took 2 seconds.

Merry Christmas.