Introduction

My involvement in the course “Understanding and Working with Learning Styles” is to improve myself as an instructor and to be able to present material in a manner which maximizes broadly and speedy learning. Since other instructors will be instructing the courses I will design, my understanding of course design is critical to ensure the quality of the course is maintained. I would like to validate my learning to implementing the principles of the course design guide and putting these principals to practical use.

The course design needs to focus on the learning and learners first to be successful(1). To focus on the learning, five learning principles are applied: learning through real life experiences, learning moves through action and reflection, human are designed to learn thus can be motivated to learn, learners use many different ways to mentally connect and relate information and humans learn best with others(2). By using the design road map, I will be able to design an effective learning experience and thus improve the comprehension and retention of the subject matter.

I have selected to evaluate an existing activity. The activity is a certification course qualifying the learners to fuse polyethylene pipe and fittings. There are two sections to the course, theoretical and practical. The knowledge and skills gained will be used to join pressure piping systems together and to branch into gas supply mains. I will suggest modifications to the course design using strategies and templates from the design course guide to apply the five learning principles into the course.

The Learning Cycle

In Peter Honey and Alan Mumfords model of the learning cycle, people learn to solve problems using four basic behaviors. People learn though having an experience or action, reflecting on an experience or action, drawing conclusions from an action or experience and planning an action or experience(3). These behaviors make up the learning cycle. People may be orientated to learn more from one or more of these behaviors than the others. Characteristics of these learning orientations are described below.

A person with a strong reflective learning orientation would tend to gather as many facts about the subject and critically analyze the data. Reflective learners want enough time to consider the options and data and are often seen as a procrastinator by the other learning orientation styles. They reflect upon an action (4,5).

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A person with a strong theoretical learning orientation would be interested in reasons why a subject or situation occurs. The theoretical learner can make sense of data by finding patterns and drawing conclusions and are able to transform complex ideas into simple models. Theoretical learners want ideas backed up by proof and are often seen as arrogant by other learning orientations. They theorize upon the data (4,6).

A person with a strong practical learning orientation would formulate a plan, make decisions and take action on the plan. Practical learners are skeptical of ideas and data not immediately relevant seemingly irrelevant perspectives and can be seen as opinionated by other learning orientations. They plan practical approaches base on relevant conclusions(4,7).

A person with a strong active learning orientation will try an action to see the results and has faith it will work out. An active learner has problems slowing down

and is often viewed by other learning styles as impulsive. The active learner wants to give it a try and learns in the midst of action (action thinking). They act upon a plan (4,8).

The learning cycle can be divided into action orientations and reflective orientations. Active and practical learning orientations make up the action half of the learning cycle. Reflective and theoretical learning orientations make up the reflective learning cycle. The learning cycle can be describe as the mental process from thought to action and back again (4).

My Learning Profile

The values shown from the Learning Styles Questionnaire shows a moderate preference for the activist and pragmatic learning styles and a strong preference for the reflective and the theoretical learning styles (9). The first validation shows a very strong preference for the activist, theoretical and pragmatic learning styles with a moderately strong reflective learning style (10). The second validation shows strong pragmatic and theoretical learning styles and moderate activist and reflective learning styles (11). The third validation shows very strong pragmatic, reflective and theoretical learning styles and a strong activist learning style (5,6,7,8).

These values show a triple dominant profile with a strong active learning style or a quadruple dominant profile with a weak active learning style. I do gather information readily, spend time considering my options and I do want relevant and practical solutions. I have realized my tendency to second guess myself and move on. At times I will act to resolve an issue where both options are just as good, choosing what I feel is best at the time.

Choice 2 Evaluate an Existing Activity

The course I wish to evaluate is meant to prepare the learner to fuse polyethylene pipe and fittings. The course is divided into two halves, in the morning the course focuses on concepts to be aware of when joining polyethylene pipe and the actual joining procedures. The afternoon half of the course allows the learner to join polyethylene pipe using the information learned in the first part of the course. The learners involved with this course are piping journeyman or apprentices. They are skilled with other piping joining systems and use these skills in there. Many of the sub-concepts are related to other piping skills and are easily transferred to this joining application.

The design system (12) and the design road map (13) will be used to evaluate the course. The design system consists of eight elements, two elements for each facilitating/learning orientation and each element representing a different task (12). A properly designed course should have as many of these element tasks as possible to involve all four facilitating/learning orientations (if possible).

There is no means to extend the learning before or after the course, as it is a one day course. In the morning half of the course, the introduction of the concepts is achieved by an interactive lecture pattern (14). The design starts by examining the concepts and procedures through lectures and handouts (element 4). The results of proper and improper procedures are analyzed and lectured upon (element 2). An exam is then given to see how much of the information has been retained (element 5). The material is taught in an expert model fashion where good learners model the expert. There is no time allotted for reflection or to examine assumptions. The course is taught in one large group

but there is little feedback unless the learners have questions. The morning part of the course does not promote the learning principles in the design guide (13).

The morning half of the course could be improved by drawing on the years of combined experience of the learners as case studies related to the course. The class could be divided into small study groups to review a group of related concepts presented after a short lecture (element 3). Students would then have time to understand the concepts and reflect on what they have learned. Study activities could be prepared so as many learning orientations and thinking styles are catered to. With these modifications the learner has more of a chance to become internally motivated to learn (13).

My suggestions using the design system road map would be to use the interactive lecture pattern using the specific review strategy (15) in groups of 2-4 people to examine (element 4) each of the concepts. Further group learning could involve a practical or connected question from the fertile questions template (16) to promote further group learning.

Critical analysis (element 2) could be improved by using the appreciative inquiry strategy (17). The critical analysis template (18), critical thinking template (19) and the fertile question template (16) would be effective in connecting the concepts and procedures together in different situations. Using these templates would increase the learning orientations (reflective, theoretical and practical) used to study the procedures and concepts.

The only source of the learner's validation of the material learned was how well the individual did on an exam. By this time in the course, all the concepts and procedures have been introduced to the learner. A demonstration of the understanding (element 5) of

the new concepts could be accomplished using the small group strategy with the parallel thinking template. The procedures could be reviewed and written down in groups of 3 and then gone over in a large group as described in the general review strategy.

In the afternoon half of the course, the concepts and procedures from the morning's lectures are used in the operation of the fusion equipment. The students work with the equipment in small groups of two or three learners. The quality of the fusion joint is analyzed. The procedures are reviewed by the learners in the presence of the instructor to correct or enforce concepts or proper procedures. Students have completed the course once they have made four different types of fusion joints. The existing course is taught in an expert model fashion.

The afternoon part of the course follows a modified discovery pattern (18). The concepts and procedures from the morning part of the course are applied to a real life situation (element 8). The joint is analyzed for defects (element 2) and conclusions are made as to the pros and cons of the procedure (element 5). Corrections are made (element 6) and another fusion joint is attempted (element 8).

To apply (element 6) the principals learned in the morning part of the course, the specific review strategy (15) and small group strategy (20) could be used with a system thinking template (21) and critical thinking template (19). Most of the learning in this part

of the course is by active learning or trial and error and experimentation (element 8). Critical analysis (element 2) could be improved by using the appreciative inquiry strategy (17). The critical analysis template (18), critical thinking template (19) and the fertile question template (16) could be used to effectively analyze the fusion joint. Conclusions could be developed using the small group strategy (20) and the parallel

thinking template (22). The conclusions could be applied using the specific review strategy (15) and small group strategy (20) with the system thinking template (21) and critical thinking template (19).

Conclusion

I have found my original course design focused on the course content instead of the learner or the learning. Through this assignment, I have been introduced to a variety of patterns, strategies and templates enabling me to use the five principles of the course design guide. I am glad I have had exposure to the concepts in this course as I believe these concepts will give me the tools to be an effective instructor. I believe I will be able to design courses in a manner where the learning is not dependant on the instructor. I have also been able to see some of my colleges learning patterns and can understand their attitudes easier. I hope over time I can understand my students learning patterns and thus find more efficient ways to relate to them and increase their knowledge.

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