A Study of Kolb Learning Style on Experiential Learning

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Abstract - The purpose of this study was to explore the reaction of different learning styles on experiential learning course. The research subjects were sophomore taking "curriculum arrangement and training programs" on Department of Human Resources Development at Hsiuping Institute of Technology in central Taiwan. First, we used Kolb’s Learning Style Inventory to divide students into 4 kinds of learning style: Diverger, Assimilator, Converger, Accommodator. Then, according to a modified questionaires as a tool to appreciate their perspectives on experiential learning.

The results including teaching strategies, curriculum arrangement and personal feeling. All results showed that action oriented Accommodator was superior to Assimilator with thinking orientation; Converger with non-emotional character was superior to Diverger with innovative character. Finally, According to these findings, we drew the inference that students with action orientation & with non-emotional character were more easy than those with thinking orientation & with thinking orientation to adapt and love experiential learning.

Index Terms - Kolb learning styles, experiential learning, teaching strategies, curriculum arrangement.

I. INTRODUCTION

In recent years, the evolution of information technologies had made lots of changes on learning style, such as on-line learning, mobile learning (m-learning), and ubiquitous learning (u-learning). Therefore, e-learning (e-learning) will be the major way of study in the further. However, there will be an important issue that how to communicate and coordinate with others, how to problem solving by teamwork in education if the frequency of people’s interaction gradually reduced under the influence of the information convenience. Wherefore, experiential learning will be the next important medium of learning in the further.

According to Kolb learning styles, there are Diverger, Assimilator, Converger, Accommodator[1][2]. This research aims at probing into the students’ reaction after experiential learning courses for different Kolb learning styles, then find out the difference about different Kolb learning styles students.

The results were made to provide some references for teachers and learners.

II. LITERATURE REVIEW

A. Experiential Learning

John Dewey’s Pragmatism paid attention to educational philosophy included: 1. Education is life; 2. Focus on the process concept; 3. Attention to active learning; 4. The same importance for both in theory and in learning, we got knowledge, skills and values through practical working in accordance with experiential learning scientific methods, which is “learning by doing”, is also the reflection process [1][3][4]. Gass stressed that the knowledge transfer of experiential learning more valuable than others [5]. David A. Kolb, Harvard Professor of Organizational Behavior, put forward the mode of "experiential learning cycle" respectively: 1. concrete experience followed by; 2. observation and experience followed by; 3. forming abstract concepts followed by; 4. testing in new situations [2], shown in Figure 1. It was also widely used in related courses. Subsequently, Kurt Hahn, British educator, established the British non-profit organizations - Outward Bound School under the assistance of Lawrence Holt in 1941. In addition, Outward Bound Schools had set up around the world [6].

![Fig. 1 Kolb experiential learning cycle](Source: Kolb (1984) - p.42)
B. Kolb Learning Styles

Kolb experiential learning theory included four learning stages: Concrete Experience, Reflective Observation, Abstract Conceptualization and Active Experimentation. Generally, there are divided into two dimensions: one is the “understanding” dimension, the vertical axis, represented with differences in the way to gain experience between Concrete Experience, CE, and Abstract Conceptualization, AC; the other is “transformation” dimension, the horizontal axis, represented with differences in the way to change experience between Reflective Observation, RO and Active Experimentation, AE. The each relative area has its corresponding learning style: Diverger, Assimilator, Accommodator and Converger [1] [2]. There is Kolb learning style classification and structure diagram, shown in Figure 2.

Figure 2 showed Converger’s learning style preferences is “Abstract Conceptualization + Active Experimentation”; Diverger’s learning style preferences is “Concrete Experience + Reflective Observation”; Assimilator’s learning style preferences is “Abstract Conceptualization + Reflective Observation”; Accommodator’s learning style preferences is “Concrete Experience + Active Experimentation”. There is Kolb learning characteristic description, shown in TABLE I [7].

<table>
<thead>
<tr>
<th>LEARNING STYLE</th>
<th>LEARNING CHARACTERISTIC DESCRIPTION</th>
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<tbody>
<tr>
<td>Converger</td>
<td>strong ability to create theoretical models that solve problems intuitively</td>
</tr>
<tr>
<td>Diverger</td>
<td>greatest strength is doing things more of a risk taker</td>
</tr>
<tr>
<td>Assimilator</td>
<td>good at generating ideas and seeing things from different perspectives interested in people with broad cultural interests</td>
</tr>
</tbody>
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III. METHODOLOGY

The subject of this study was sophomore students recruited from “curriculum design and training programs” at department of Human Resource Development on Hsiuping Institute of Technology in central Taiwan, purposive sampling to select about 42 students and returned 34 questionnaires. There is about 81% for effective response rate.

This study adopted a modified Kolb Learning Style Inventory [8] [9] and a modified students’ responses questionnaires [9] including teaching strategies, curriculum arrangement, and personal feeling on experiential learning to explore the students’ response after experiential learning course. There was a five-point Likert-type scale ranging from 1= strongly disagree to 5 = strongly agree.

IV. RESULT

Above all, we divide students into 4 kinds of learning style: Diverger, Assimilator, Converger, Accommodator by Kolb’s Learning Style Inventory, as shown in TABLE II. Next, the results obtained from analyzed and tested the data of modified students’ responses questionnaires by frequency, percentage, mean. The results including teaching strategies, curriculum arrangement, and personal feeling on experiential learning were achieved as follows:

<table>
<thead>
<tr>
<th>TABLE II DISTRIBUTION OF KOLB LEARNING STYLES</th>
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</thead>
<tbody>
<tr>
<td>Kolb Learning Styles</td>
</tr>
<tr>
<td>----------------------</td>
</tr>
<tr>
<td>Diverger</td>
</tr>
<tr>
<td>Assimilator</td>
</tr>
<tr>
<td>Converger</td>
</tr>
<tr>
<td>Accommodator</td>
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<tr>
<td>Total</td>
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</table>

Source: This study

A. Teaching Strategies

The findings showed that priorities of average scores on the reaction for Teaching Strategies were converger, assimilator, diverger and accommodator are shown in Figure 3, shown in Figure 4.
Fig. 3. Teaching strategies question items charts

Fig. 4. Teaching strategies charts

B. Curriculum Arrangement

The findings showed that priorities of average scores on the reaction for Curriculum Arrangement were converger, diverger, accommodator, and assimilator are shown in Figure 5, shown in Figure 6.

C. Personal Feeling

The findings showed that priorities of average scores on the reaction for Personal Feeling were accommodator, converger, diverger, and assimilator are shown in Figure 7, shown in Figure 8.
Fourth Kolb learning styles as follows: Diverger who have imagination and understanding things ability, innovative character, mainly composed with two learning types by Concrete Experience and Reflective Observation; Assimilator who have inductive ability and establishing theoretical framework ability, with thinking orientation, mainly composed with two learning types by Reflective Observation and Abstract Conceptualization; Converger who with problem solving, knowledge- used ability, a non-emotional character, mainly composed with two learning types by Abstract Conceptualization and Active Experimentation; Accommodator who easy to adapt the environment, intuitive than logical, with action orientation, mainly composed with two learning types by Active Experimentation and Concrete Experience [2].

The teaching method of experiential learning is using games, assistive devices, and creating learning situations, so that students can personally operate themselves, more clearly understand the actual construction and operation, and then transfer into memory. The study found that priorities of average scores on the reaction for Teaching Strategies were converger, assimilator, diverger and accommodator. The result showed accommodator with action oriented responses was superior to assimilator with think orientation; converger with non-emotional character responses was superior to diverger with innovative character.

Experiential learning curriculum arrangement including Helium Stick, Procupin Progression, now Flake, Spider's Web and other projects. The study found that priorities of average scores on the reaction for Curriculum Arrangement were converger, diverger, accommodator, and assimilator. The result showed accommodator with action oriented responses was superior to assimilator with think orientation; converger with non-emotional character responses was same as diverger with innovative character.

The study found that priorities of average scores on the reaction for Personal Feeling were accommodator, converger, diverger, and assimilator. The result showed accommodator with action oriented responses was superior to assimilator with think orientation; converger with non-emotional character responses was superior to diverger with innovative character.

In conclusion, this study divided students into Diverger, Assimilator, Converger, Accommodator by Kolb's Learning Style Inventory to appreciate their perspectives on experiential learning. The study found that priorities of average scores on the reaction for Teaching Strategies, Curriculum Arrangement, Personal Feeling were the same as accommodator with action oriented responses was superior to assimilator with think orientation; converger with non-emotional character responses was superior to diverger with innovative character. By analyzed results, we suggest that students with action oriented and non-emotional character are more easy than those with innovative thinking character and think orientation to adapt and love experiential learning course.

REFERENCES