UNDERSTANDING LANGUAGE LEARNERS:

A Study of the Learning Styles of Japanese EFL Students at the College Level

Gregory W. Kozlowski

INTRODUCTION

In this paper I use David Kolb's Learning Style Inventory (LSI) questionnaire to investigate the learning styles of Japanese college level EFL students. I interpret the findings of this research in the context of Kolb's model of Experiential Learning and discuss them in terms of learning style preferences and learning environment orientations.

The primary aims of this paper are to present an understanding of the application of the Experiential Learning model to language learning, and to describe and interpret the dominant learning style types identified in this study. In view of these aims, it is hoped that those to benefit most from this study will be classroom EFL teachers who are new to Japan, as well as those old hands who, like myself, continue to experiment with their teaching and would like a further insight into the complex make-up of their Japanese college students. Moreover, this paper also should be of interest to those teachers who wish to use information in this study to duplicate this research with other learner groups.

This paper is divided into two sections. The first outlines the rationale for this study and gives a general explanation of the conceptual framework of Experiential Learning. The second describes the research and the findings in terms of the distribution of dominant learning style types found and its interpretation.

I
RATIONALE

A book that has helped me to better understand learning and improve my teaching is *Experiential Learning* by David Kolb.[1] For me, his model of learning has become an invaluable investigative tool which helps me to manage my students' learning more effectively.

Central to the Experiential Learning model is the concept of learning styles which can be identified using Kolb's Learning Style Inventory (LSI) questionnaire. Knowing students' learning styles is useful because it provides teachers with a descriptive framework with which they can study learning behavior at various levels. This means that teachers can examine learners' personality types, specific task-oriented skills and learning environment preferences. Moreover, using this information, it is possible to analyze specific problem areas related to aspects of students' learning behavior.

Teachers can also use this framework to determine learners' learning environment orientations according to the overall atmosphere and the particular learning mode and skills it requires. Moreover, each type of environment orientation can be further described in terms of the teacher's role, the primary source and use of teaching materials, the rules guiding learners' behavior, and the provisions for feedback. In this way, teachers can find out which aspects of the learning environment they are creating may be unfamiliar to students or incompatible with their learning style preferences. Understanding what effects these aspects of the learning environment have on learning behavior can help teachers' identify learning situations which are going to be resisted or rejected by students.

Thus, Experiential Learning provides a framework for understanding the relationship between learning behavior and teaching practice. Within this framework, problems and learning difficulties are viewed in the context of a mismatch between learning style preferences and the constraints of the imposed learning environment. Consequently, by

knowing how to modify the learning environment, to better match as well as broaden students' learning style preferences, teachers can resolve problems and improve the learning process.

THE STRUCTURE AND PROCESS OF EXPERIENTIAL LEARNING

Before entering on a discussion of my study of Japanese college level students' learning styles, I would first like to give some background to the conceptual framework which serves as the basis for the descriptions of both learning style preferences as well as learning environment orientations.

Central to this framework is Kolb's definition of learning. "Learning", Kolb says, "is a continuous process of adaptation whereby knowledge is created by the grasping and transforming of experience."[2] Within this process, Kolb identifies two opposed ways or "modes" of grasping experience, and two opposed ways or "modes" of transforming it into knowledge. These can be visualized as two lines crossing each other in the middle similar to compass points on a map; the ends of the vertical line representing the two opposed ways of grasping experience and the ends of the horizontal representing the ways of transforming it into knowledge (see Fig. 1.0). In all, these four learning modes form the basis for the associated concepts of learning style preferences, and classroom environment orientations.

Learning Modes

Kolb's explanation of the four learning modes is dense and complex. For the purposes of this paper, I will give a simplified summary as follows. According to Kolb, learning begins with raw sensory data or information which can be perceived in two basic, fundamentally opposed ways. The distinction between these is similar to the distinction that has been made in recent scholarship between "right brain" and "left brain" modes of thought.[3]

The first of these two ways of perceiving raw sensory information with which learning begins emphasizes the totality of any given experi-
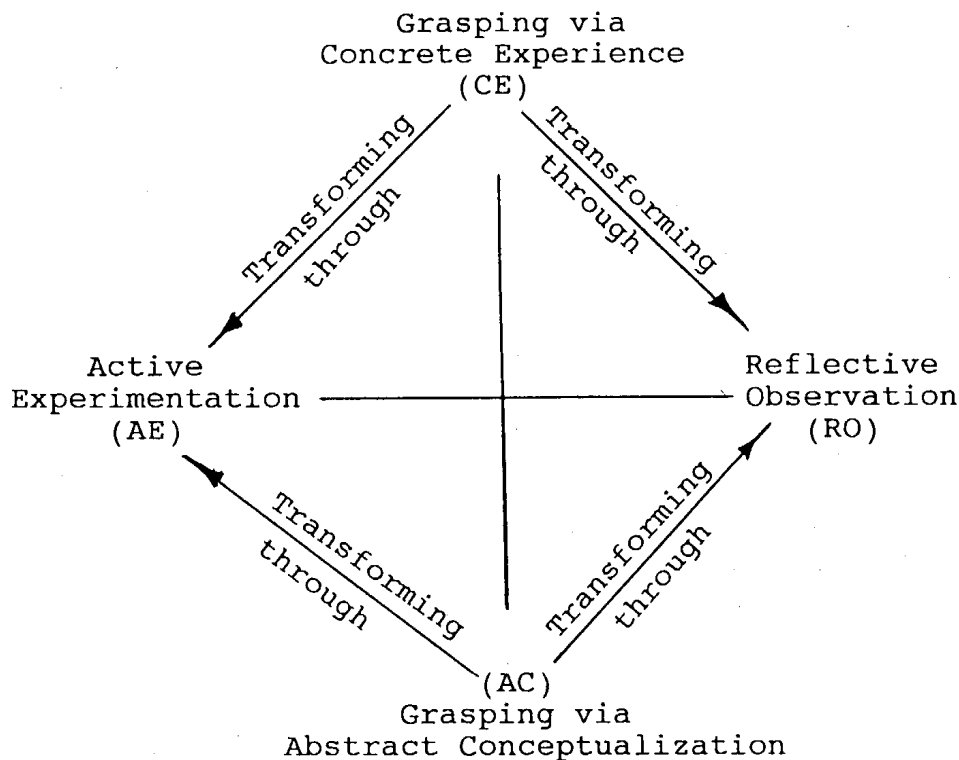
Fig. 1.0 The Experiential model of learning through modes of grasping and transforming experience.

ence. This way of perceiving is holistic and intuitive. It emphasizes feeling over thinking and is characterized by personal involvement and a concern with uniqueness and complexity of present reality as opposed to theories and generalizations. It is a process of apprehending rather than comprehending reality and people with a preference for seeing things in this way are said by Kolb to be oriented towards Concrete Experience, or CE as seen at the top of Fig. 1.0. People with this orientation value relating to others and being involved in real situations.

Kolb's second basic way of organizing raw sensory data emphasizes an analytical and systematic perceiving of information. This way of perceiving emphasizes thinking over feeling. It is a process of comprehending rather than apprehending, and people with a preference for seeing things this way are said by Kolb to be oriented towards Abstract Conceptualization or AC seen at the bottom of Fig. 1.0. This mode of perceiving information is characterized by detachment and objectivity.

Once raw sensory data has been organized into abstract concepts or grasped into concrete images, there are two ways or modes in which this information can be processed or transformed into knowledge. In one mode, a person can reflect on the concepts or images, observe how they relate to each other, and explore their meanings and implications. Kolb's term for processing the perceived information in this way is Reflective Observation or RO as seen to the right in Fig. 1.0. People with an orientation towards this mode of processing information prefer reflection to action. They value patience, careful observation, and considered thoughtful judgement.

The other mode of processing organized or grasped information Kolb calls Active Experimentation or AE as seen to the left in Fig. 1.0. This mode emphasizes practical application as opposed to reflective understanding. People with this orientation prefer doing to observing and they are willing to take some risk in order to try something out.

Ideally, learners should develop the ability to use both modes of perceiving information and both modes of processing it into knowledge so that they could apply various learning abilities to a host of different learning situations. However, instead of achieving an ideal balance of development in all four modes, most people develop a preference for one of each pair of opposites over the other. Thus, a person's preferred way of perceiving information (either through Concrete Experience or Abstract Conceptualization) combined with a preferred way of processing it (either through Reflective Observation or Active Experimentation) makes up that person's individual learning style.

The Learning Style Inventory (LSI)

Within this framework of four learning modes—Active Experience (AE), Reflective Observation (RO), Abstract Conceptualization (AC), and Active Experimentation (AE)—Kolb identifies four basic learning styles. Using Kolb's Learning Style Inventory (LSI) questionnaire (see Fig. 1.3), it is possible to identify towards which of these modes learners have a preference.

The Learning Style Inventory (LSI) is a nine set self description questionnaire which measures a person's relative emphasis on each of the four learning modes. Each set has four words, and each word in the set corresponds to a learning mode, for example: *feeling* to Concrete Experience (CE); *watching* to Reflective Observation (RO); *thinking* to Abstract Conceptualization (AC) and *doing* to Active Experimentation (AE). Respondents are asked to rank-order these words in a way that best describes his or her learning, assigning a 4 to the word which best characterizes the way they learn, a 3 to the next best, a 2 and finally a 1 to the word which is least characteristic. By associating a word in each set to a learning mode, the Learning Style Inventory (LSI) provides two combination scores which indicate learning orientation in terms of preferences for concreteness (CE) over abstractness (AC), and reflection (RO) over action (AE).

Learning Styles

The result of a combined preference indicates one of four possible learning styles. These four learning styles can be visualized as corresponding to the four quadrants of Kolb's learning modes diagram. Thus, as seen in Fig. 1.1, moving in a clockwise direction, a combined preference for Concrete Experience and Reflective Observation (CE+RO) indicates a Divergent style of learning and those with this style preference are said to be Divergers. On the other hand, learners whose combined preference is for Abstract Conceptualization and Reflective Observation (AC+RO) prefer an Assimilative style and are referred to as Assimilators. A Convergent style emphasizes Active Conceptualization and Active Experimentation (AC+AE) and learners with this preference are called Convergers. Lastly, those with an Accommodative style, are said to be Accommodators and they have a combined preference for Concrete Experience and Active Experimentation (CE+AE). Each of the four learning style types-Diverger, Assimilator, Converger, and Accommodator-can be described in terms of personality type, specific task oriented skills and learning environment preferences. These, I will
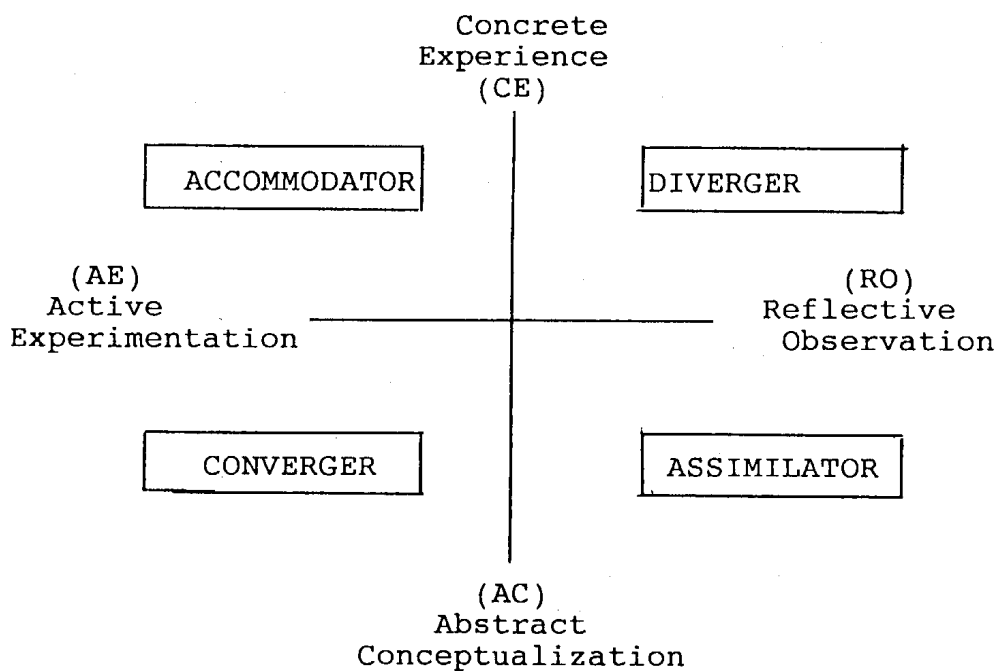
```
                    Concrete
                   Experience
                      (CE)
                       │
     ┌─────────────────┐ │    ┌─────────────────┐
     │  ACCOMMODATOR   │ │    │ DIVERGER        │
     └─────────────────┘ │    └─────────────────┘
                       │
      (AE)             │              (RO)
     Active           ─┼─         Reflective
  Experimentation      │           Observation
                       │
     ┌─────────────────┐ │    ┌─────────────────┐
     │   CONVERGER     │ │    │ ASSIMILATOR     │
     └─────────────────┘ │    └─────────────────┘
                       │
                      (AC)
                    Abstract
                 Conceptualization
```

Fig. 1.1   Learning style orientations.

discuss in detail in the next section during my discussion of the distribu-tion of the learning mode and learning style preferences of the Japanese college level students in this study.

Learning Environments

In addition to serving as the framework for learning style prefer-ences, the four learning modes—Active Experience (AE), Reflective Ob-servation (RO), Abstract Conceptualization (AC), and Active Experimen-tation (AE)—also form the basis for describing the learning environ-ment.

According to Kolb and Fry (1975), any educational program or classroom session can be viewed as having degrees of orientation toward each of the four learning modes in the Experiential Learning model. These orientations are labeled as Affective, Perceptual, Symbol-ic, and Behavioral, and are described in terms of the overall learning environment they create and the particular mode and related learning skills they require. Thus, starting at the top of Kolb's diagram and moving in a clockwise direction, we can see in Fig. 1.2 that an Affective Environment emphasizes the experiencing of concrete events (CE); a

AFFECTIVE LEARNING ENVIRONMENT

(CE)

BEHAVIORAL
  LEARNING (AE) ——————————+—————————— (RO)
ENVIRONMENT

PERCEPTUAL
LEARNING
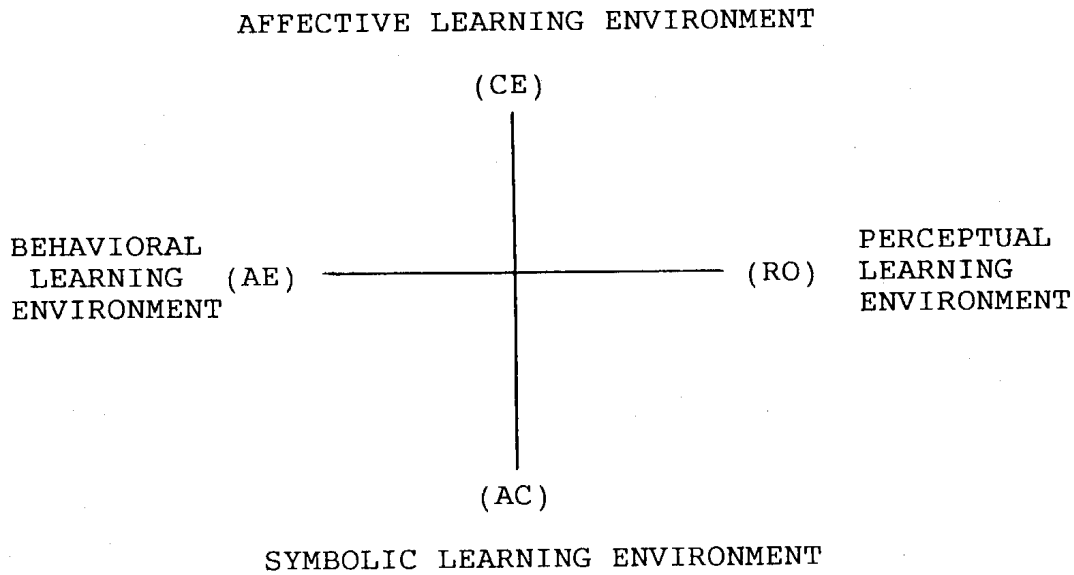ENVIRONMENT

(AC)

SYMBOLIC LEARNING ENVIRONMENT

Fig. 1.2 Learning Environment Orientations.

Perceptual Environment stresses observation and appreciation (RO); a Symbolic Environment emphasizes abstract conceptualization (AC), and a Behavioral Environment stresses action taking in realistic situations (AE).

    I will describe these in more detail in the next section during my discussion of the distribution of learning environment orientations.

II
RESEARCH

Subjects and Method

    Subjects in the study were freshmen and sophomores at five private Japanese universities in the Kanto region. These students were majors in English Literature, Foreign Languages, Culture Studies, and Law. One group tested were Engineering majors. All students were high school graduates and came from various parts of Japan. Their ages varied between 18, and 20 years old. A total of 350 students in twelve separate classes participated.

    Students participating in the study were asked to fill out Kolb's Learning Style Inventory (LSI) shown on the following page in Fig. 1.3. The LSI used in this study was translated into Japanese in order to eliminate any potential misunderstanding of test items. Accuracy of

<u>Learning Style Inventory</u>

This inventory is designed to assess your method of learning. As you take the inventory, give a high rank to those words which best characterize the way you learn and a low rank to the words which are less characteristic of your learning style.

You may find it hard to choose the words that best describe your learning style because there are no right or wrong answers. Different characteristics described in the inventory are equally good. The aim of the inventory is to describe <u>how</u> you learn, <u>not</u> to evaluate your learning ability.

INSTRUCTIONS

There are nine sets of words listed below. Rank each set of four words, assigning a <u>4</u> to the word which <u>best</u> characterizes your learning style, a 3 to the word which next best describes your learning style, a 2 and finally a <u>1</u> to the word which is <u>least</u> characteristic of you as a learner. Be sure to assign a different rank number to each of the four words in each set. DO NOT MAKE TIES.

アンケートの答え方

これはあなたの学習スタイル（方法、くせ）を調べるアンケートです。各問題に4つずつ語が並んでいます。各問題において、あなたの学習スタイルを最も特長ずける語を4にして順に3、2、1番と番号を入れてランク付けして下さい。1はあなたの学習スタイルを特長ずけるには1番ふさわしくない語と言うことになります。同点はありません。1～4まで必ず1つずつ入るようにして同じ問題に番号が2つ入らないようにして下さい。

1. ___discriminating   ___tentative   ___involved   ___practical
   判別する   試しにやって見る   熱中する   実践する

2. ___receptive   ___relevant   ___analytical   ___impartial
   受け入れる   関連ずける   分析的に見る   偏見の無い

3. ___feeling   ___watching   ___thinking   ___doing
   感じる   見る   考える   行う

4. ___accepting   ___a risk-taker   ___evaluative   ___aware
   受けとめる   危険を覚悟してのぞむ 評価する／価値を見極める 気がつく

5. ___intuitive   ___productive   ___logical   ___questioning
   直観的   生産的   論理的   懐疑的

6. ___abstract   ___observing   ___concrete   ___active
   抽象的   観察的   具体的   行動的

7. ___present-oriented   ___reflecting   ___future-oriented ___pragmatic
   現実志向   内省的／熟考する   未来志向   実用優先

8. ___experience   ___observation   ___conceptualization ___experimentation
   経験的   観察的   概念的   実験的

9. ___intense   ___reserved   ___rational   ___responsible
   集中的／積極的   控え目な   理性的   責任感を持つ

+++
For scoring only:

CE____   RO____   AC____   AE____
   234578   136789   234589   136789

Fig. 1.3   The Learning Style Inventory (LSI).

translation was confirmed by a double translation method which involved the re-translating of all of it back into English. Scoring was done by totaling the values (either 1, 2, 3, or 4) of six preselected sets for each column. For example, as seen in Fig. 1.3, the score for the Concrete Experience mode of learning (CE) in the far left column, is based on the added sum of values indicated for sets 2, 3, 4, 5, 7, and 8. Notice that different sets are used for adding the sum of values in (RO), (AC), and (AE). Norms for scores on the LSI along with reliability and validity data are reported in detail elsewhere (KOLB, 1976, 1981).

After calculating the total for each mode of learning, the scores are graphed onto a two-dimensional map indicating a four-point learning style profile based on the four learning modes-Active Experience (AE), Reflective Observation (RO), Abstract Conceptualization (AC), and Active Experimentation (AE). An example of the Learning Style Profile is provided in Fig. 1.4. Note that the degrees of orientation or preference for each mode of learning are indicated within 20, 40, 60, 80, and 100 percentile learning spaces.

RESULTS

Results of the LSI were broken down in a number of ways to facilitate the understanding and interpretation of the data. In Table 1.0, we can see that of the 350 students participating in the study 165 or 47% have indicated an overall preference for Concrete Experience (CE) as the dominant learning mode. That is followed by 27% who have indicated a preference for Reflective Observation (RO). In comparison, preference for Active Experimentation (AE) and Abstract Conceptualization (AC) is much less at 15% and 11% respectively.

The significance of these scores is further evidenced by a breakdown of the distribution of learning modes-CE, RO, AC, and AE-by degree of percentage present within the 20, 40, 60, 80, and 100 percentile learning spaces on the graph. In examining data using the percentile circles, we can consider values in the 80% and 100% circles as indicating a high to very high preference for a learning mode, those in the 60%
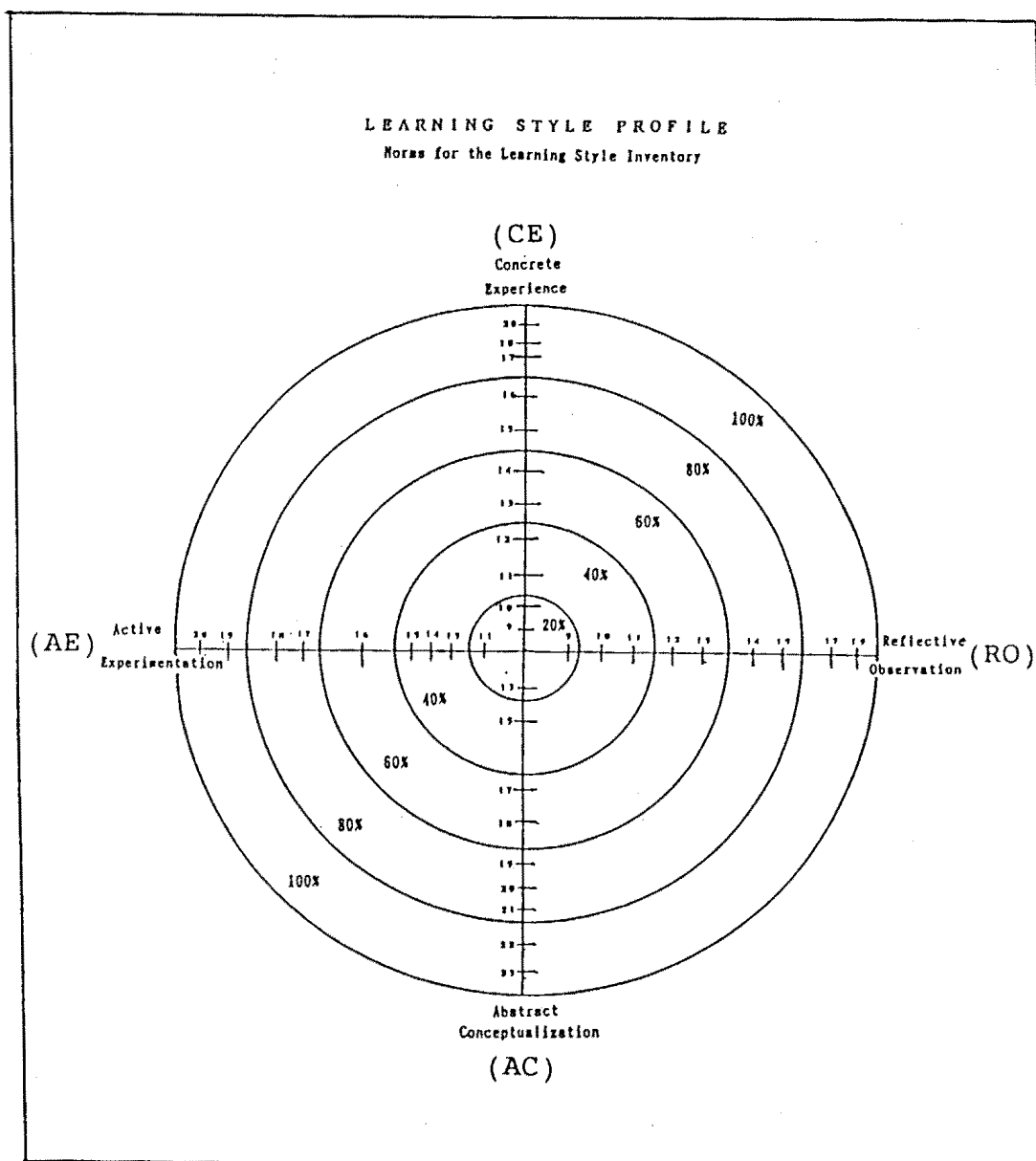
Fig. 1.4   The Learning Style Profile.

Table 1.0   Distribution and percentage of dominant adaptive learning
modes.

	CE	RO	AC	AE
Number of students	165	94	38	53
Percentage of total	47%	27%	11%	15%

circle as moderate, and those in the 40% as showing some preference,
while preference in the 20% circle can be interpreted as low to very low.
Thus, we can see in Table 1.1 that perhaps the most telling of all

Table 1.1 Distribution of scores within learning space percentiles of learning mode orientations

	80% or over circle High-Very high preference	60% circle Moderate preference	40% circle Some preference	20% or under circle Low-Very low preference
CE	82%	4%	11%	3%
RO	71%	12%	13%	4%
AC	22%	13%	22%	43%
AE	32%	11%	25%	32%

indicators is the great number of students who have a high preference (82%) for Concrete Experience (CE) as the dominant mode for grasping raw sensory data, and Reflective Observation (RO) (71%) as the dominant mode for processing it into knowledge. Conversely, notice the very small number of those with a low to very low preference for CE and RO at 3% and 4% respectively.

In analyzing this data, the profile that emerges is that of a student population which possesses a large majority of those with a moderate to high degree of preference for Concrete Experience (CE) and Reflective Observation (RO). This can be visualized by looking at Fig. 1.5 which shows the profile of the average of scores.

Examined in terms of learning style preferences, the combination preference for Concrete Experience (CE) and Reflective Observation (RO) results in a Divergent style of learning. Thus, it is not surprising, as we can see in Table 1.2, that Divergers are the singly most dominant group at 53% of the total.

In examining the distribution of learning style types, it is important to make a distinction between those students who are extreme in their learning style preference and those who, along with their prefered learning style, have indicated also a moderate to high degree of preference for other learning styles. This distinction is important because learners who are extreme in their preference will be much more likely to
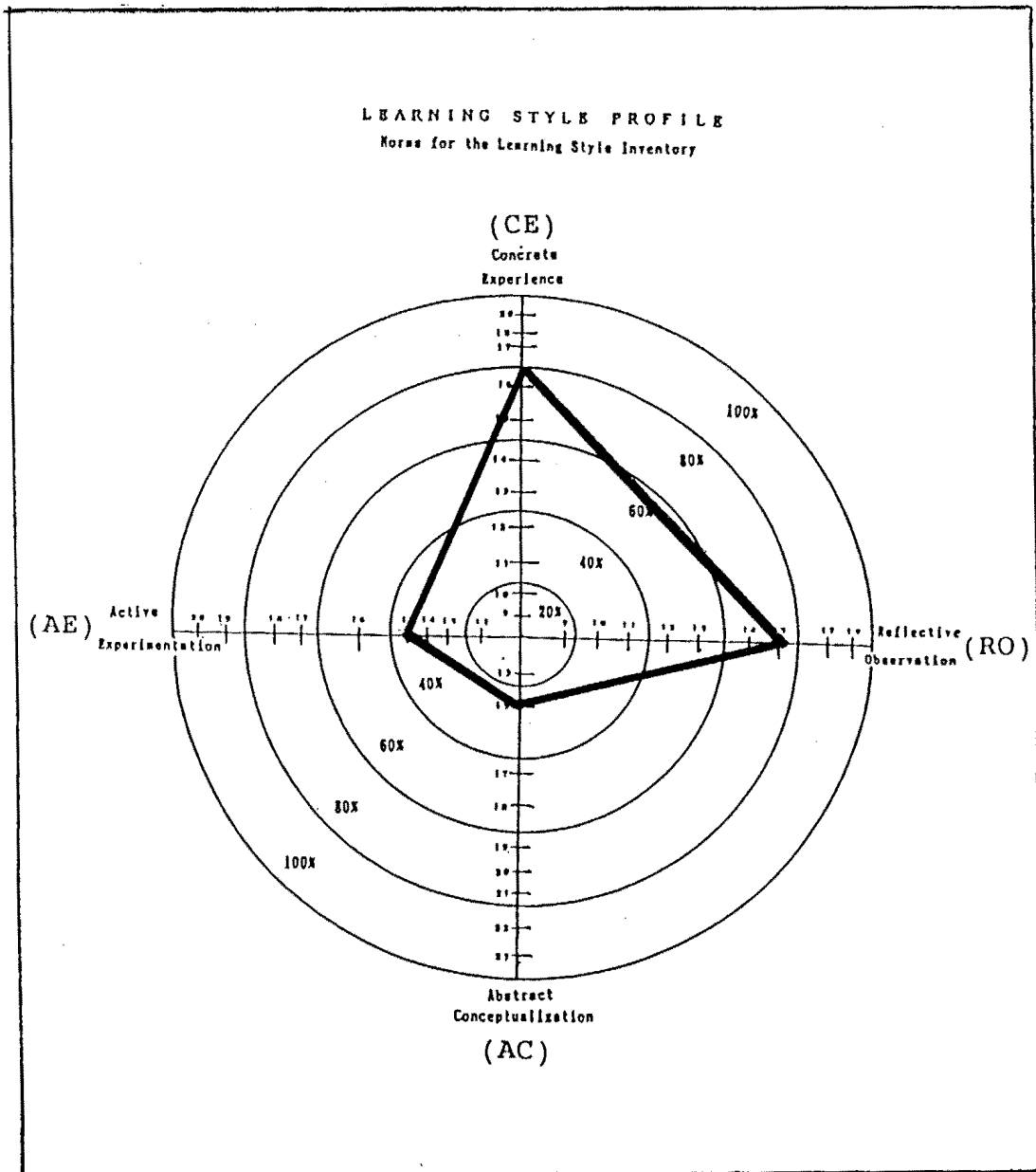
Fig. 1.5   Profile of the average of scores.

Table 1.2   Distribution and percentage of learning style types.

Divergers	Assimilators	Convergers	Accommodators
186	52	17	95
53%	15%	5%	27%

resist learning environments which are unfamiliar or incompatible with their learning style, while those who indicate at least moderate "cross-over" preference to other learning styles should be able to adapt much

Table 1.3 Distribution of learning style preferences within moderate to very high preference (60%–100%) percentile learning spaces.

Divergent learning	Assimilative learning	Convergent learning	Accommodative learning
76%	28%	12%	45%

more readily. For example, of the 53% of the Divergers in this study about half of these also have a moderate to high preference for either Accommodative learning (30%) or Assimilative learning (25%). Moreover, close to half of the 27% of the Accommodators also have indicated a moderate to high preference for a Divergent learning style. The data is even more telling for Assimilators of whom 60% have indicated moderate to high preference for Divergent learning. Lastly, of the 5% of Convergers identified, over 60% of them also have a moderate to high preference for all of the other three learning styles. The effect of this cross-over distribution can be seen in Table 1.3.

INTERPRETATION OF RESULTS

Learning Style Preferences
Divergers

In comparing data between Tables 1.2 and 1.3, it becomes clear that not only are the majority (53%) of the students Divergers but that also, and perhaps even more importantly, close to 80% of the students have indicated a moderate to very high preference for this learning style.

Divergers, as learners, perceive information concretely and process it reflectively. Interpreted in terms of personality type, the profile that emerges from this data is a student body that is tolerant, open minded, understanding, flexible, adaptable, and feeling oriented, placing emphasis on human values, the establishing of personal friendships, and making decisions mainly through beliefs and likes. They tend to be very aware of other people and their feelings, enjoy pleasing others, are sympathetic, seek harmony, and value personal involvement and commitment.

Merrill and Reid in their *Style Awareness Text* (1981), describe the Diverger as an "Amiable" type using the following words:[4]

Conforming	Supportive
Unsure	Respectful
Pliable	Willing
Dependent	Dependable
Awkward	Agreeable

In terms of specific task oriented skills, these findings indicate that about four out of five students have a talent for gathering information and data from many different perspectives. They are careful observers, good intuitive decision makers, make great effort to understand the complexity and implications of immediate situations and should function well in unstructured situations.

Accommodators

This description of the student body profile is further clarified by examining the distribution of data in the Concrete Experience (CE) and Active Experimentation (AE) learning modes. A combination preference for these two modes of learning indicates an Accommodator learning style. Accommodators, as learners, perceive information concretely and process it actively. The emphasis of this learning style lies in doing things, carrying out plans and tasks, and getting involved in new experiences. Over one quarter (27%) of the students indicated a preference for this style of learning (Table 1.2). Moreover, if we consider those students who have a moderate to very high cross-over preference (Table. 1.3), almost half of the students in this study can be considered Accommodators to a moderate degree. Consequently, we can say that in addition to the Diverger profile described above, about a half of the student body also possesses the personality type and skills of Accommodators from moderate to high levels.

On average, then, close to half the students can be described as being good-natured, perceptive, easygoing, adaptable realists who are patient and tolerant of everyone. As learners, they are enthusiastic

about new things and situations, relish change and value having an influence on the environment around them. They like to see results and, thus, sometimes may be seen as manipulative and pushy. Merril and Reid describe the Accommodator as an "Expressive" type in the following words:

Manipulative	Ambitious
Excitable	Stimulating
Undisciplined	Enthusiastic
Reacting	Dramatic
Egotistical	Friendly

The Accommodators' strength lies in their excellent memories and enthusiasm for getting involved in doing things and accomplishing tasks. They tend to solve problems in an intuitive trial and error manner, relying heavily on other people for information rather than their own analytic ability. Moreover, their concern with the practical application of what works will most likely cause them to discard a theory or plan if it doesn't fit easily. Working in bursts of energy with slack time in between, they tend to follow their inspirations-good or bad-and reach conclusions quickly.

Put together, these two learning style types-Divergers and Accommodators-make up the vast majority of the students (80%) in this study. Both learning style types share a strong preference for the Concrete Experience (CE) mode of grasping or perceiving information but process it differently; Divergers through reflection; Accommodators through action.

Assimilators and Convergers

In examining data for Abstract Conceptualization (AC), one needs to notice the extremely low percentage of Assimilators (15%) and Convergers (5%), both of which rely on Abstract Conceptualization (AC) as a mode for perceiving experience. Only 11% of the students identified a preference for Abstract Conceptualization (AC) as a dominant learning mode, and, in fact, almost half (43%) indicate a disaffection for this mode of learning.

Consequently, if we include those who have indicated a moderate cross-over preference, we can say that only about a third of the student body can be seen as Assimilators in varying degrees. Assimilators perceive information abstractly and process it reflectively, and can be characterized as analytic learners. According to Anthony Gregorc, these students prefer traditional classrooms, and presentations that have substance and are rational and sequential in nature. They defer to authority, and are not put off by a dull lecturer, if the material is well organized.[5]

In terms of personality type, Merrill and Reid describe the Assimilator in the following words:

Critical	Industrious
Indecisive	Exacting
Stuffy	Persistent
Picky	Orderly
Moralistic	Serious

The greatest strength of this learning style lies in inductive reasoning skills and the ability to devise theories by integrating observations with what is known. The third or so of the students who have indicated facility for this learning style will generally be fascinated by ideas, abstract concepts, expert opinion, and details without putting much value to any sort of practical application.

Looking at data for the last group, Convergers, it is evident that very few of those with this learning style are present in the college classroom in Japan. In this study only 5% of the students indicated a preference for this style of learning. In practical terms, this means that when we include those with a moderate to high cross-over preference for this learning style, there may be only between one to four Convergers in a class of 30.

Convergers learn by perceiving information abstractly and processing it actively. In *The 4MAT System* (1980), Bernice McCarthy calls them "Common sense learners."[6] These learners are pragmatists who learn by testing theories and applying common sense. They value

strategic thinking, are skills oriented, and their main strength lies in the practical application of ideas. Merrill and Reid describe them as the "Driver" type in the following words:

Pushy	Strong willed
Severe	Independent
Tough	Practical
Dominating	Decisive
Harsh	Efficient

As learners, Convergers as well as Assimilators prefer to be less involved with social and interpersonal issues than with ideas, abstract concepts, and technical tasks. Also, both of these learning types tend to be controlled in their expression of emotion.

In summarizing this interpretation of the data for Abstract Conceptualization (AC), it is important to note that due to the low preference for this mode of learning about two out of three students will probably exhibit extreme difficulty and resistance to using logic, ideas, and concepts and in manipulating abstract symbols. Also, over 70% of students will probably lack skills such as inductive reasoning and the creating of theoretical models associated with the Assimilative learning style. Moreover, probably almost all of the students will lack skills associated with Convergent learning, in particular, problem solving, decision making, and the practical application of concepts.

Learning Environment Orientations

In addition to this profile of the student body in terms of personality types and skills, further insights about learners can be gained by knowing their learning environment orientations. Learning environments are associated with particular learning modes (CE, RO, AC, or AE) and can be described in terms of the overall climate, the teacher's role, the primary source and use of teaching materials, the rules guiding learners' behavior, and the provisions for feedback. In examining preferred learning environments, it is important to note that Divergers and Accommodators are the dominant learning style types identified in this

study (80% of all students). These two learning style types share a preference for the Concrete Experience (CE) mode of perceiving which is associated with an Affective learning environment. Moreover, Divergers also have a strong preference for the Reflective Observation (RO) mode of processing which is associated with a Perceptual learning environment. Lastly, the Accommodators' preference for Active Experimentation (AE) mode of processing is associated with a Behavioral learning environment. Combined, these three learning environment orientations-Affective, Reflective and Perceptual-are the preferred learning environments of an overwhelming majority of the Japanese college students (89%) in this study.

In describing these learning environments, a number of similarities exist. All three are characterized by a friendly, low-risk, personalized climate which focuses on each individual's needs and goals. Moreover, the teacher's role is similar and can be described as that of a facilitator, guide, coach and advisor who is nonevaluative, and suggests instead of criticizing. Lastly, all three learning environments allow learners freedom to exchange various information with each other and, to some extent, control either the source or use of course content.

In addition to having these similarities with the other two learning environments, in an Affective environment, learners are encouraged to reflect upon experiences and express feelings, values and opinions in exchanges between themselves and the teacher. In this way, students explore teaching materials which are often generated from current/ immediate topics and situations, and can vary according to learners' needs. Feedback is personalized with regard to each individual's needs and goals as opposed to comparative and can come from both teacher and peers. Moreover, there is discussion on how the course is proceeding.

A Perceptual learning environment, on the other hand, can be further described as one in which learners are able to define problems for investigation, collect relevant information and research questions, looking at topics from different perspectives (their own experience,

expert opinion, literature) and in various ways (listen, write, discuss, act out, think, touch, smell etc.). In this environment, learners are free to explore others' ideas and opinions in order to determine their own perspective. In doing tasks, emphasis is on process or how it gets done rather than on solution and learners are encouraged to define the criteria for success themselves. Individual differences in this process are allowed and are used as the basis for further understanding. The reward system emphasizes process versus getting a particular answer.

In addition to prefering these two learning environments, about half of the students have indicated a moderate to high preference for a Behavioral learning environment. While sharing similarities in classroom climate and teacher's role, this environment emphasizes the active application of knowledge or skills to practical "real life" problems or simulations which learners can relate to and feel some intrinsic satisfaction in having solved. The focus in this environment is on doing and completing tasks. Moreover, learners mostly manage their own time-making decisions and choices on how to proceed with tasks, but are held accountable by criteria related to task performance.

Lastly, the least preferred learning environment among the students in this study is the Symbolic learning environment. The Symbolic learning environment is associated with the Abstract Conceptualization (AC) mode of perceiving for which only slightly over a third of the students indicated a moderate to high preference. This environment can be characterized as rigid, restrained, and authoritative. The teacher's role is that of a task master, timekeeper, enforcer of schedules and expert who judges learners' output. Teaching materials are decided upon by the teacher, generally before the start of the course. They mainly deal with abstract symbols, concepts, notions or conventions which learners are required to recall via memory. In this environment, learners are usually trying to solve a problem to which there is usually a right or best solution. Success is measured against the right or best answer in relation to criteria imposed by the teacher or expert opinion.

CONCLUSION

In characterizing Japanese college students in terms of Kolb's model of learning, I have attempted to create a framework of descriptive categories that can be used by language teachers as a tool to better understand the learning environment they are creating. Moreover, in presenting learning behavior in terms of learning styles, I have tried to de-mystify the widely accepted, culturally deterministic explanations of learning behavior whose ethnocentric nature implies the existence of fixed psychological traits incapable of change or individual variation.[7] According to Kolb, learning styles form as a result of various socialization experiences in family, school and work and continue to develop and change with experience throughout one's lifetime. This understanding of learning behavior supports an individualized view of learners' needs while at the same time recognizing the potential for them to change. Contrasted with culturally deterministic explanations, Kolb's categories of learning style types provide a much more useful framework for practical, instructional options.

Notes

1   Unless otherwise noted, all information pertaining to the description of the Experiential Learning model, including those for the LSI, learning style preferences and learning environment orientations originates from David A. Kolb's *Experiential Learning.* Englewood Cliffs, New Jersey: Prentice-hall, 1984.
2   Kolb 41.
3   John M. Green, "Learning Modes and Language Teaching Methods: The Search for the Right Mix" *Nabe News* Volume X, Number 1, Fall, 1986: 4.
4   David W. Merrill and Roger H. Reid, *Personal Styles and Effective Performance.* Radnor, Pennsylvania: Chilton Book Company, 1981. Cited in Bernice McCarthy, *The 4MAT System.* Barrington, IL.: Exel, Inc., 1980: 31.
5   Anthony F. Gregorc, "Learning/Teaching Styles: Their Nature and Effects" *Student Learning Styles: Diagnosing and Prescribing Programs.* Virginia: National Association of Secondary School Principals, 1979. Cited in McCarthy 30.
6   Bernice McCarthy, *The 4MAT System.* Barrington, IL.: Exel, Inc., 1980. 41.
7   This perception of "cultural determinism" comes from John Ratliff, "Paths to

Internationalization: Communication Style in a Changing Japan." *The Language Teacher*, XIII: 3, March, 1989. 9–13.

Bibliography

Ausubel, David. "Learning as Constructing Meaning." In *New Directions In Educational Psychology Learning And Teaching.* ed. Noel Entwistle, 189–199. New York: The Falmer Press. 1987.

Gregorc, Anthony F. "Learning/Teaching Styles: Their Nature and Effects" *Student Learning Styles: Diagnosing and Prescribing Programs.* Virginia: National Association of Secondary School Principals, 1979. Cited in McCarthy.

Imamura, Shigeo. "Critical Views of TEFL: Criticism on TEFL in Japan." *The Teaching of English In Japan.* Tokyo: Eichosha. 1978. 15–22.

Kolb, David, A. *Experiential Learning.* Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1984.

————, "Experiential Learning Theory and the Learnig Style Inventory: A Reply to Freedman and Stumpf," *Academy of Management Review,* April 1981.

————, *The Learning Style Inventory: Technical Manual.* Boston: McBer and Company, 1976.

————, and Ronald E. Fry, "Toward an Applied Theory of Experiential Learning," in C. Cooper, ed., *Theory of Group Processes.* London: Wiley, 1975.

McCarthy, Bernice. *The 4MAT System.* Barrington, IL.: Exel, Inc., 1980.

Merrill, David W., and Roger H. Reid. *Personal Styles and Effective Performance.* Radnor, Pennsylvania: Chilton Book Company, 1981.

Nunan, David. *Understanding Language Classrooms.* New York: Prentice Hall International, 1989.

Ratliff, John. "Paths to Internationalization: Communication Style in a Changing Japan." *The Language Teacher,* XIII: 3, March, 1989. 9–13.