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ABSTRACT

A study investigated: (1) the distribution of learning styles of students of Japanese as a second language, as measured by the Myers-Briggs Type Indicator, (2) students' preferences for error correction in speaking and writing, as measured by a researcher-developed questionnaire, and (3) relationships between students' learning styles and their preferences for error correction. Items were divided into three categories of error correction: explicit; implicit; and self-correction. Subjects were 38 undergraduate students in four second-semester Japanese classes. Results indicate that students fell into 12 of the 16 Myers-Briggs learning style categories, with extraverted students outnumbering introverted students significantly. A large majority of students (89.5 percent) preferred self-correction to explicit or implicit correction. One subject preferred explicit correction, two preferred implicit correction, and one rated implicit and self-correction equally. No statistical significance was found in the relationship between learning style and error correction preference. Implications for teacher's expectations and classroom instruction are discussed briefly. Contains 23 references. (MSE)

Learning Styles and Error Correction: How Do Learning Styles Affect Students' Perceptions Towards Error Correction in a Foreign Language Classroom?

By

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Introduction

This study illuminates the relationship between learning styles and learners' preferences for error correction in a foreign language classroom. The attentions of researchers and foreign language teachers have been drawn to error correction for the past thirty years, because it is central to learners' improvement (Mings, 1993). Ommagio (1993) also states that the development of accuracy is vital in proficiency-oriented instruction. However, many teachers are unsure of appropriate ways to correct students' errors. In fact, the way a teacher corrects an error does not necessarily coincide with students' preferred manner for being corrected.

In a previous unpublished study, I investigated foreign language teachers' and students' preferences for error correction. I asked both foreign language teachers (13 teachers) and students (52 students) at Indiana University their beliefs about the frequency, types, and methods of error correction. The findings displayed multiple ways the teachers had to correct errors. In the study, many teachers stated that they change their ways of error correction according to students' personalities in the classroom. However, their variation of different methods of error correction may not correspond to the needs of students with various personalities, because the findings also demonstrate the gap between teachers' and students' preferences for error correction.

Personality traits make a difference in how people learn and what they learn (Mc Caulley & Natter, 1995; Myers and Myers, 1980). Therefore, different students may respond to the same teacher's approach very differently. Moody (1988) states that a teacher should not expect a student to adapt to her approach, because students' ways of responding may be unchangeable.

Students' ways of responding to learning environments are considered to be learning styles. Researchers have defined learning styles as cognitive and physiological behaviors that serve as relatively stable indicators of how learners perceive, interact, and respond to the learning environment (Richards, 1994; Willings, 1988; Keefe, 1979, etc.). Much research has been conducted to examine how different learning styles affected learners' achievements, their preferred activities in the classroom and their level of self confidence. (Murray-Harvey, 1995;

Riding, 1991, etc.). However, no research has yet analyzed which specific methods of error correction are more appropriate for different learning styles.

The ultimate goal of this study is to suggest to foreign language teachers appropriate ways of error correction for students with different learning styles. In order to achieve this goal, I investigated 1) the distributions of learning styles of the students studying Japanese; 2) students' preferences for error correction in speaking and writing; and 3) relationships between students' learning styles and their preferences for error correction. I used questionnaires to examine the relationship between learning styles and learners' preferences for error correction. The Myers-Briggs Type Indicator was used with students in order to determine their personality types and learning styles.

Literature Review

A. Learning Styles

As is stated above, learning styles are cognitive and physiological behaviors that serve as relatively stable indicators of how learners perceive, interact, and respond to their learning environment. Namely, learning styles refer to how people prefer to learn, because most people have their own unique ways to learn. Students' achievements in the classroom improve if their style matches the styles of their teachers, peers, or other elements in the classroom environment. Therefore, it is significant to recognize their learning styles to help them be successful in a given class (Dunn, 1996).

Kyriacou et, al. (1996) state that learning styles in general refer to three areas: learners' attitudes and preferences, choice of activities, and approach towards learning tasks. Learning styles in foreign language teaching have been defined as characteristic cognitive and physiological behaviors that serve as relatively stable indicators of how learners perceive, interact, and respond to their learning environment (Richards, 1994; Willings, 1988; Keefe, 1979, etc.). More than twenty entities were identified by researchers as learning styles (Ehrman, 1987; Oxford, 1990; Shipman & Shipman, 1985). In this section, I will review major research in learning styles and other personal factors specifically related to language learning.

(a) Field Independence-Dependence

The Field Independence (FI) and Field Dependence (FD) dimension is the most frequently studied type of learning styles. In general, FI means the ability to isolate key factors from an overall context and FD is the inability to do so (Oxford, 1990). Therefore, FI language learners can analyze and restructure the patterns of language whereas FD language learners process them more globally. Previous research has indicated FI learners' occasional advantages over FD learners especially in learning foreign languages. No consistent advantages, however, have been found to prove that FI learners are more likely to achieve language proficiency (Canale&Swain, 1980).

(b) Brain Hemisphericity

Brain hemisphericity was advocated by Willing (1988) and Hartnett (1981). It is a research area where the FI-FD dimension is incorporated into the study of brain hemisphericity. In the study of brain hemisphericity, the left hemisphere is the place where all verbal information is processed. The right hemisphere, on the other hand, processes visual and spatial images. Therefore, "left-brain" people are more field independent, logical, linguistically productive, and analytic, whereas "right-brain" people are field dependent, global, linguistically receptive, and holistic (Leaver, 1989).

(c) Kolb's Dimension

Kolb (1982) listed the cognitive style dimensions, which are well-known as Kolb's Learning Style Inventory. The dimensions, are: reflective observation (watching) vs. active experimentation (doing); and concrete experimentation (feeling) vs. abstract conceptualization (thinking). The Kolb model generated the foundation of the 4MAT curriculum design system, which is used in the Foreign Service Institute and public schools in Virginia (Oxford, 1990).

(d) Competition-Cooperation-Independence

A society's educational establishment influences learners' competition and cooperation (Kohn, 1987). Competitive learners seldom practice social, cooperative strategies in learning a

language. Competition in language learning is accompanied by anxiety, inadequency, guilt, hostility, withdrawal, fear of failure, and too strong a desire for approval (Bailey, 1983). In cooperative learning, on the other hand, learners work together in small groups, where each student depends on others and consider others' welfare. Cooperative learning yields student interaction, achievement, self-esteem, altruism, language learning motivation, feedback about language errors, and use of varied language functions (Oxford, 1990). Therefore, competitive learners prefer competition which involves winning a reward and defeating others, while cooperative learners choose to work with others and support each other mutually. As for the relationship between cooperation and independence, Reid (1987) found that many English as a Second Language learners preferred working by themselves in general. Nevertheless, this area has not been studied much .

(e) Reflection-Impulsivity

This dimension consists of reflection (slower, more systematic investigation of hypotheses) vs. impulsivity (quicker acceptance of hypotheses). Namely, reflective learners are more likely to be slow and accurate, while impulsive learners tend to be fast but inaccurate (Oxford, 1990). Generally, reflective language learners are said to achieve better performance than impulsive learners, because impulsive learners tend to be impatient and inaccurate in responses. However, reflective learners' overconcern for accuracy could create anxiety, which may decrease language learning achievement.

B. Myers-Briggs Type Indicator

Among many scales that measure language learning styles, Myers-Briggs Type Indicator (MBTI) emerged as a model, and is particularly important in understanding success or failure in learning a foreign language (Ehrman & Oxford, 1990). In addition to Ehrman and Oxford's study, three more published studies assert the legitimacy of MBTI in the research of language learning (Ehrman & Oxford, 1990; Moody, 1988; and Oxford & Ehrman 1988). This is why I chose to use it in this current study.

MBTI is the psychological-type learning styles model, which directly employs Jung's model of conscious functioning (Myers & MaCoulley, 1985). MBTI embodies four dimensions that cover cognitive, affective, and social aspects of learning styles: extraversion vs. introversion; sensing vs. intuition; thinking vs. feeling; and judging vs. perceiving. The description of each dimension is below:

(a) Extraversion vs. Introversion

Extraverts are stimulated by interaction with others, and their major concerns are external world. Introverts are energized through internal concepts and ideas, and their primary focus is on solitary activities.

(b) Sensing vs. Intuition

Sensing types are aware of sensory data. As a result, they tend to be practical and factual. On the other hand, intuition types are oriented with relationships, possibilities, and meanings. Therefore, their perspectives tend to be innovative and theoretical.

(c) Thinking vs. Feeling

A thinking person relies on impersonal, objective, and cause-and-effect criteria in making decisions. In contrast, a feeling person's decision making criteria consist of personal or social values, interpersonal relationships, and his/her own feelings or others' feelings.

(d) Judging and Perceiving

A Judger wants to achieve closure, structure, organization, and control. A Perceiver, however, thinks highly of spontaneity, flexibility, freedom, and autonomy and values adaptation and openness.

C. Preferences for Error Correction

In a previous study, I examined foreign language teachers' beliefs and students' expectations concerning error correction (Ueno, 1997). I administered a survey regarding error correction to forty-three students and twenty-two teachers. All the students were enrolled in the second year Japanese courses at a major midwestern university and teachers were currently teaching or had taught a foreign language class before.

According to the findings, teachers tend to be more sensitive about error correction than students. Their comments indicate that error correction can be harmful and should be avoided since it may activate the "affective filter" by raising students' level of anxiety (Schelz, 1996). Consequently, they avoid making students uncomfortable or embarrassed when correcting their errors and admit the need to ignore errors more often than students. Moreover, some discrepancies were found between teachers' and students' preferences in the ways errors are corrected. While the students want to be independent and take the responsibility for learning by applying their own error correction, teachers tend to offer answers without challenging them or without providing a chance for self correction.

The survey revealed that many teachers chose three to five ways of correcting errors as their preference. Teachers' comments in the questionnaires indicated that ways of correcting errors are related to students' learning styles as is seen in comments like "I change the way I correct errors according to which students I am dealing with," "The way I correct errors depends on each student's personality." 'When I was teaching English to Japanese students in Japan, I didn't correct students' errors at all, because the students were so shy that I had to take a long time just to make them say something."

Thus, it might be wrong to generalize that one universal approach to error correction solves problems for all kinds of students. There might be an appropriate way of correcting according to students' personalities, or rather, students' learning styles. Hence, this study examines the relationship between students' learning styles and their preferences for error correction.

Methodology

The goals of this study are to suggest to foreign language teachers appropriate methods of error correction for students with different learning styles. In order to achieve this goal, the study investigates:

1) the distribution of learning styles of the students studying Japanese, 2) students' preferences for error correction in speaking and writing, and 3) relationships between students' learning styles and their preferences for error correction.

A. Participants

Thirty-eight undergraduate students at a major midwestern university in four second semester Japanese classes during the Fall semester of 1997 participated this study. This was an 82.6% participation rate out of the original forty-six students asked to contribute to the study. Twenty-two participants were female and sixteen participants were male. All the participants but one were undergraduate students.

B. Instruments

a. Myers-Briggs Type Indicator

I administered Myers-Briggs Type Indicator in this study by utilizing an abbreviated test booklet (Consulting Psychologists Press, 1996). I used the abbreviated version so that participants would not have to spend too much time responding to items. I believe that this choice contributed to a rather high response rate from participants.

The test booklet consisted of two parts. In Part I, participants selected answers that came closest to describing how they usually felt or acted. One example is, "When you go somewhere for the day, would you rather A. Plan what you will do and when, or B. Just go?" Part II asked which word in a pair appealed the participants more. For example, A. Scheduled or B. Unplanned.

b. Survey

I created twenty four survey items regarding students' preferences for error correction. After creating the survey, I asked seven people to answer it twice. These people were not

included among the participants and they answered the survey on two consecutive days. This test-retest procedure was conducted to establish the reliability of the survey and 98.1 % reliability was attained as a result.

After surveys were returned by the participants, each item was closely examined by four teachers. These teachers had taught Japanese for more than two years. After the examination, ten items were discarded upon the advice of these teachers. They were discarded mainly because they did not appear to be directly related to a teacher's approach towards error correction. For example, the item "I feel discouraged when my teacher corrects my error" simply expresses students' psychological condition after being corrected in the class. The item "I tend to analyze when I make a grammatically wrong sentence" was regarded as being about students' own approach towards their errors. Additionally, several items implied similar concepts consequently, only one of them was selected. For example, "I feel comfortable when my classmates correct my error" and "I like it when my classmates correct my errors" were considered to express the same notion. Therefore, only "I like it when my classmates correct my errors" was used.

Next, the remaining fourteen items were grouped into three categories by these four teachers in order to conduct ANOVA analysis. The categories and the items that fall into each category are presented below:

Category 1: Explicit Correction

- I want my teacher to correct any kinds of mistakes I make (including grammatical patterns I learned before, pronunciation, etc.)
- I want my teacher to give me the correct answer rather than having me correct my error.
- I want my teacher to give me only one correction at one time.
- I prefer my teacher tell me explicitly which part of my sentence is wrong.
- I think the teacher should have one consistent way of correcting in class.
- When I make a mistake, I want an an immediate correction tather than taking time to discuss the mistake.

Category 2: Implicit Correction

- I think it is OK that the teacher does not correct errors as long as the errors are not serious enough to impede communication.
- I want my teacher to correct only the critical errors in the sentence. (Errors concerning the target structure, etc.)
- I like it when my classmates correct my errors.
- It is helpful when my teacher gives me several alternatives when correcting errors.
- I think the teacher should have various approaches to correcting students' errors.

Category 3: Self-Correction

- I want my teacher to give me a chance to correct my errors before s/he corrects me.
- I prefer my teacher's giving me some clue or example rather than immediate correction.
- Even after I am given a correct answer, I think of additional ways to say something.

Procedures

Both MBTI and the questionnaires were given to the students at the same time after class. MBTI and the questionnaire were stapled together so that I could match the psychological type and the preference for error correction easily. The forms were returned anonymously except for those participants who wanted to know their psychological types later. The participants were given approximately 5-10 minutes to fill out the forms. Some participants took the forms back home and brought them back to the next class. Some of those students who did not fill out the forms in class did not return the forms, which is why the return rate was 82.6 %.

Data Analysis

The three major research questions in this paper are: 1) the distributions of learning styles of the students studying Japanese, 2) students' preferences for error correction in speaking and writing, and 3) relationships between students' learning styles and their preferences for error correction. For the first two questions, frequency counts and percentages of students for the various Myers-Briggs categories and the three error correction categories will be presented. For

the last question, correlation between each Myers-Briggs category and error correction and statistical significance, using one way ANOVA t test will be shown.

Results

1) the distributions of learning styles of the students studying Japanese

Myers-Briggs Type Indicator contains four dimensions that cover cognitive, affective, and social aspects of learning styles. They are extroversion vs introversion; sensing vs intuition; thinking vs. feeling; and judging vs. perceiving. The combinations of these four categories generate sixteen different personality types: ISTJ, ISFJ, INFJ, INTJ, ISTP, ISFP, INFP, ESTP, ESFP, ENFP, ENTP, ESTJ, ESFJ, and ENTJ. (I = introvert, E = extrovert, S = sensing, N = intuition, T = thinking, F = feeling, P = perceiving, and J= judging)

The participants in the study fall into twelve out of sixteen different categories. They are, INTJ, INFP, INTP, ISTJ, INFJ, ISFJ, ENTP, ENFP, ESFP, ESTJ, and ENTJ. Table A shows the exact numbers in the distribution. No students were identified as types ISTP, ISFP, ESTP or ENFJ.

Table A

ENFP 6	ESTJ 5	ESFJ 5	INTJ 4	ISTJ 4	INFJ 3
INFP 2	ISFJ 2	ENTP 2	ESFP 2	INTP 1	ENTJ 1

Overall, the extravert students exceeded the introvert students significantly in number (57.9 % - extrovert, 42.1% - introvert). Another characteristic that was distinctive was the percentage of students who fall into the judging category: 63.2 % - judging as opposed to 36.8 % - perceiving. The descriptions of the top three personality types follow:

ENFP: Warmly, enthusiastic, high spirited, ingenious, imaginative. Able to do almost anything that interests them. Quick with a solution for any difficulty and ready to help anyone with a

problem. Often rely on their ability to improvise, instead of preparing in advance, can usually find compelling reasons for whatever they want.

ESTJ: Practical, realistic, matter-of-fact, with a natural head for business or mechanics. Not interested in subjects they see no use for, but can apply themselves when necessary. Like to organize and run activities. May make good administrators, especially if they remember to consider others' feelings and points of view.

ESFJ: Warm-hearted, talkative, popular, conscientious, born cooperators, active committee members. Need harmony and may be good at creating it. Always doing something nice for someone. Work best with encouragement and praise. Little interest in abstract thinking or technical subjects. Main interest is in things that directly and visibly affect people's lives.

2) Students' preferences for error correction

Students' preferences for error correction are divided into three categories: explicit correction, implicit correction, and self-correction. Explicit correction tends to be a very direct and straightforward approach for correcting errors. Implicit correction is a more indirect approach where correction is not highly emphasized. Self-correction is used when a teacher encourages students to correct the errors they made.

For each of these three categories, three to six statements were presented in the form of a Likart Scale, where the participants ranked their responses to these statements. Responses ranged from "strongly disagree" with a value of 1 to "strongly agree" with a value of 5. The explicit correction section contained six items, therefore the minimum score was six while the maximum score was thirty. Likewise, implicit correction included five items, so the minimum score was five and the maximum score was twenty-five. Three items were part of the self-correction portion, so the minimum score was three and the maximum score was fifteen. The scores for explicit correction ranged from ten to twenty-five with a mean of 19.1. The scores for implicit correction varied from eight to twenty with the mean being 14.7. Eight was the lowest score of self-correction while the highest score was fifteen, and the mean was11.4.

The scores for each category were tallied, and divided by the maximum number possible and multiplied by 100. This provided a percentile. By comparing the percentiles of each category, the students' preferences were operationally defined as explicit, implicit or self-correction. For example, student A's score for these three categories are explicit correction: 16, implicit correction: 15, and self-correction: 12. In that case, her percentile is explicit correction: 45.7%, implicit correction: 50% and self-correction 80%. Therefore, her preference is operationally defined as self-correction.

The findings show that 89.5% of the participants prefer self-correction. Specifically, thirty-four out of thirty-eight participants prefer self-correction to explicit or implicit correction. The preference of two participants fell into the implicit correction category. Only one participant preferred explicit correction while another participant rated implicit correction and self-correction as equal rate. Even those participants whose scores indicated a preference for a method other than self-correction indicated that it ranked a close second. Thus, the majority of the participants fell into self-correction in terms of preference for error correction.

3) Relationship between students' learning styles and their preferences for error correction

In searching for a relationship between each variable of MBTI personality types and students' scores of preferences for error correction, their correlation was examined. MBTI includes eight variables, extrovert, introvert, intuition, sensing, thinking, feeling, perceiving, and judging. Each participant was scored in each category. These scores were then correlated with the scores of the Likart scale from the survey of error correction preference. Using Pearson Product Moment correlations between learning styles and error correction preferences, revealed no statistically significant relationships. Similarly, the same data examined using Analysis of Variance to determine significant differences in learning style scores among error correction preference groups revealed no significant differences between and among groups. Actual connection can be found in Table below.

	Extrover	Introver	Intuitive	Sensing	Feeling	Perceive	Thinkin	Judging

Explicit	.038	-.076	.212	-.26	-.127	.212	.12	-.157
Implicit	.071	-.057	-.127	.213	-.014	-.07	.198	-.211
Self	-.095	.151	.194	-.192	-.095	.032	.236	-.04

Discussion and Conclusion

As is demonstrated in the results section, no statistical significance was displayed between participants' MBTI personality types and their preferences for error correction. In this section, the author offers three speculations for the weak correlations and outlines a further study concerning students' preferences in relation to their learning styles and teachers' expectations in error correction in foreign language classrooms.

In this study, Myers-Briggs Type Indicator (MBTI) was utilized to define students' learning styles. As Pittenger (1993) states, MBTI measures students' learning styles as well as teachers' teaching styles based on different personality types defined by MBTI.. This match between personality types and learning styles verifies its validity. Reliability of MBTI has also been supported through test-retest procedures (Pittenger, 1993). However, there is no convincing evidence to justify that knowledge of type is a reliable or valid predictor of important behavioral conditions (Pittenger, 1993). Thus, MBTI may not predict students' behavioral conditions, in this case, students' preferences for error correction.

It does not necessarily mean, however, that no relationship exists between students' learning styles and students' preferences for error correction. In MBTI, sixteen unique personalities are available. Not all personality types can be related to the students' preferences for error correction. Moreover, there may be some other factors that are related to students' preferences. In that sense, fewer groupings or more groupings might show a significant relationship between students' learning styles and their preferences for error correction. Thus, other measurements of learning styles might function better.

Additionally, the sample size of this study was relatively small (thirty-eight students). As Pittenger (1993) asserts, a large size is required in MBTI if the test is to be used to assess

individuals. Therefore, a larger sample size would determine the significance of correlation between learning styles and students' preferences for error correction more effectively.

Next, the questionnaire concerning students' preferences for error correction might not have distinguished the preferences very well. Since several items were eliminated as a result of the discussion with other teachers, the number of the items was unevenly distributed between the three categories (explicit correction, implicit correction, and self-correction). Specifically, seven items belonged to the explicit correction whereas only three items were assigned to self-correction. Implicit correction consisted of six items. This uneven distribution of items might be the reason why no significant relationships were found between students' personality and their preferences for error correction.

Moreover, some statements on the questionnaire display very little variance among participants' preferences. For example, eighty percent of the students responded that they agreed with the statement for explicit correction, "I want my teacher to correct any kind of mistakes I make (including grammatical patterns I learned before, pronunciation, etc)." Likewise, sixty-eight percent of the students disagreed an item for implicit correction, " I think it is OK that the teacher does not correct errors as long as the errors are not serious enough to impede the communication." Thirty-four out of thirty-eight students responded either agree or strongly agree to the statement in the self-correction category, "I want my teacher to give me a chance to correct my errors before s/he corrects them." Thus, even though the content validity of the questionnaire was verified through the teacher's agreement and so was the reliability through test-retest procedure, the items still could have been clarified and the number of the items assigned to each category could have been reconsidered as well.

It is also possible that truly no significant relationships exist between students' learning styles and their preferences for error correction. In the previous pilot study the author conducted (Ueno,1997), most students wanted the teachers to let them take the self-correction approach in their error correction. Teachers' preferences, however, varied a great deal and many of them stated that their approach changes depending on which students they teach. In other words, they

claim to change their approaches based on students' personalities and their learning styles and keep them flexible. Dekeyser (1995) also indicate that the role of error correction may vary depending on learner characteristics such as their age, IQ, learning styles, and motivation.

The findings of this study imply that teachers' expectations might be different from those of their students. As my pilot study indicates, many of the students preferred self-correction according to the questionnaire. This result symbolizes their wish to become more independent learners. Kern (1995) states, however, that scholars in the area of second language research examines differences among learners, hoping to decide the instructional environment that most closely matches the different types of learners. It is true that individualized instruction has been illuminated in the area of foreign language education. In light of error correction, however, the teachers' considerations may not be as effective as they believe. Nunan (1993) reported that one of the instructional components students and teachers most disagreed upon was error correction. Other studies also assert that the teacher-student mismatch in beliefs about error correction is a robust finding (Kern, 1995).

In a future study, teachers' approaches to different students and how students perceive them should be more focused. Class observation, interviews with teachers and students, and surveys would be appropriate instruments for that. It will help teachers reconsider their effectiveness of their approaches and students' needs and fill in the gap between teachers' and students' expectations in foreign language classrooms.

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