

A multi-dimensional approach to analyzing individual differences of Japanese language learners of English

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Abstract

Recently, there have been an increasing number of studies on elucidating learners' individual differences (IDs). However, researches in individual differences have not been usefully applied in language teaching and language learning. This might be because various variables should be considered and controlled. Therefore, one aim of this study is to deal with IDs from the broad perspectives of social, affective, and cognitive domains. Thus, IDs are studied in terms of learning strategies, anxiety, preferences, and motivation as well as learning style. The other purpose of this study is to present a diagnostic sheet of IDs based on the research results in the hope that students could reflect upon their individual characteristics. Another noteworthy feature of this diagnostic sheet is that it will also be useful to language teachers. That is because they cannot only provide students with feedback on their learning processes but also design syllabi according to their individual needs or strengths.

1. Introduction

Skehan (1998) mentions that researches in individual differences (IDs) have not yet provided 'spectacular' results. That may be because there are many variables to be considered and controlled, as Messick (1976) states that IDs relate to social, affective and cognitive domains. Therefore, in order to see a bigger picture of Japanese learners' individual traits, we created a questionnaire consisting of 92 items in order to measure the frequency of Japanese university learners' use of learning strategies, their degree of learner anxiety, and their degree and direction of learner motivation. The items in the questionnaire were carefully selected from SILL (Oxford, 1989), FLCAS (Holwitz, 1984), Preliminary Measurement for Learner Preference (ELY, 1984) and Learner Motivation Measurement (Yukina, 2003). We conducted this questionnaire for 607 Japanese University students and analyzed the results by exploratory factor analysis. What is unique about this study is to provide students with a diagnostic feedback based on the research results.

Recently, information technologies have brought us various pedagogical reforms, as exemplified by computer-aided language learning or cross-cultural distance learning. Therefore, the ideas of self-centeredness (Tudor, 1996) and learner autonomy (Benson, 2001) are introduced in Japan's EFL context. As language teachers, it is of high interest to find out learners' individual needs and find several ways to respond to individual characteristics. Against this background, we created a questionnaire and a diagnostic sheet so that teachers' feedback and learners' learning process can be adjusted according to learners' IDs. Moreover, we hope that our Involvement in

learners' IDs could enhance their autonomy or motivation.

First, in this study, we give an overview of previous studies on IDs in the English teaching contexts. Then, we present how the items are selected for a questionnaire of IDs. While showing the results of the questionnaire, the correlations between the extracted factor scores of individual characteristic traits and the TOEIC scores are examined. Finally, a diagnostic sheet is created and the feasibility of this sheet is considered.

2. IDs in English teaching contexts

The notion of field Independent (FI) and field dependent (FD) which was established in the field of psychology by Witkin et al. (1979), has been applied also in English teaching contexts. Several studies report that FI learners prefer to learn grammar and grammatical rules (Abraham, 1983 and Day, 1984). Thus, FI learners tend to be associated with “analytic” learning style. FD learners, on the other hand, tend to prefer to learn outside schools and by interacting with NSs in social contexts (Hansen, 1987). Thus, FDs are defined as “holistic”.

Willing (1987) divided immigrant learners in Australia into 4 different groups by using an analytic-holistic dimension and a passive-active dimension as shown in Figure 1. The learners accommodated in the first quadrant (Analytic & Active) are defined as “convergers”. Such learners tend to be analytic, prefer solitary activities, and like to learn about language. The learners in the second quadrant (Holistic & Active) are regarded as “Communicative Learners”. They prefer to learn outside classrooms and they tend to be brilliant with integrative skills. The learners in the third quadrant (Holistic & Passive) are categorized as “concrete learners”. They prefer in-class or in-group activities by playing games with other learners. The learners in the fourth quadrant (Analytic & Passive) are “Conformists”. Such students are authority-oriented, depend too much on in-class activities, and prefer to learn via visual aids.

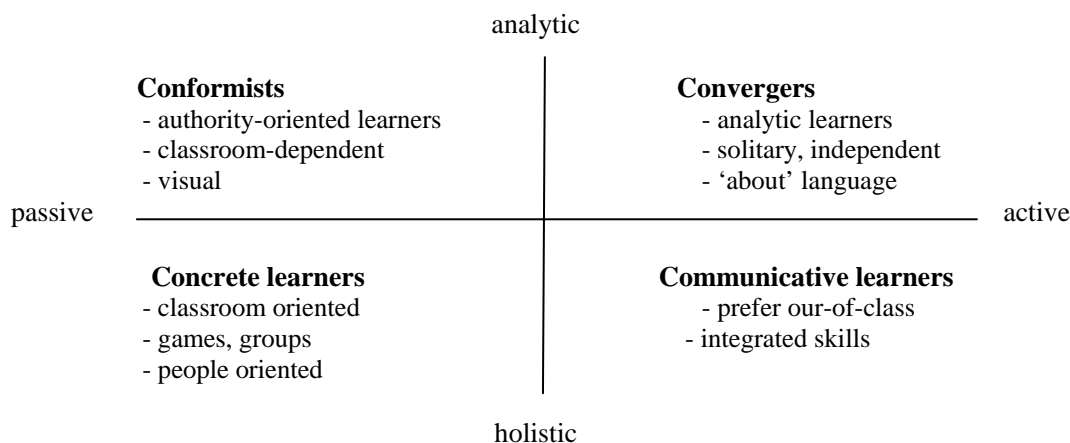


Figure 1. Willing's framework of learning style (Willing 1987:86)

As previous studies (see for example, Skehan, 1998) have already pointed out, one drawback of this study ignores the “degree” (of analytic vs. holistic, and active vs. passive). For example, the learner A plotted near the intersection of x-axis and y-axis which is a center of the graph, and the learner B plotted far from the intersection will be both categorized in the same group, just because the learners A and B happen to be in the same quadrant. The other problem is that learners can adjust themselves according to a specific task or a context of situation. In other words, learners can be flexible and adjust the extent of how much one should be active or analytic. We should pay more attention to the flexible nature of strategy use and learning style, even though learning style is sometimes understood as a rather inflexible trait.

This Willing’s approach or cluster analysis can open up possibilities for classifying learners and providing meticulous teachings according to their different styles. As language teachers, however, we have to keep in mind that other important variables can be neglected and trimmed off during the process of classification or categorization of learners.

3. Survey

3.1 Participants and their Proficiency

Our participants are 607 Japanese university students. 398 students reported their TOEIC scores: Mean: 637.0 (SD=105.50, n=398) . Out of 398 students, 341 took WeTEC. 38 took TOEIC, 12, TOEFL PBT and 7, TOEFL CBT. Their scores were converted into TOEIC scores by using the following regression equations, which are officially provided by Waseda University International and English Testing Service.

$$\text{TOEIC} * 0.348 + 296 = \text{TOEFL PBT}$$

$$\text{TOEIC} = 1.1226 * (\text{WeTEC}) - 117.89$$

3.2.1 Learning Strategy

In this study, we used 62 types of learning strategies consisting of 6 strategies: Memory, Cognitive, Compensation, Meta-cognitive, Affective, Social strategies. See Strategy Inventory for Language Learning (SILL: Oxford, 1989). Since the Japanese translated version (ESL/EFL Version 7.0) deals with only 35 types of strategies, we added the remaining 27 items by carefully translating these original items into Japanese.

3.2.2 Learning Anxiety

The Japanese translated version of Foreign Language Classroom Anxiety Scale (FLCAS: Holwitz, 1986) was used in this study. Originally FLCAS consists of 33 items. Yukina conducted a questionnaire of 33 items, targeted at third-year Japanese junior high school students, and extracted four factors. With reference to the results of factor loadings, we selected the top three items with

sufficient factor loadings. Thus, we selected 12 items from original 33 items.

3.2.3 Learner Preferences

Preliminary Measurement for Learner Preference (PMLP:Ely, 1986) originally consists of 27 items. In Yukina (2003), these items can be reliably reduced to 9 items in 3 factors: The top 3 items with high factor loadings are selected in these three factors.

3.2.4 Motivation

With reference to Yukina’s study, Integrative Motivation and Instrumental Motivation are dealt with in this study. Since this scale was targeted at junior high school students, items suitable to university students are selected. As a result, 9 items in two types of motivations are chosen in this study.

3.2.5 The total number of a questionnaire

As shown table 1, the total number of the four scales is reduced from 143 to 92 items. As the result of exploratory factor analysis we conducted, Ver. 2 cut down the number to 69. The process of this reduction will be shown in 3.3.

Table1. Questionnaire

| | Scale | Original | Ver.1 | Ver.2 |
|----------------------------|----------|----------|-------|-------|
| Learning Strategies (SILL) | 5 likert | 62 | 62 | 41 |
| Learning Anxiety (FLCAS) | 5 likert | 33 | 12 | 12 |
| Learner Preference | 5 likert | 27 | 9 | 8 |
| Motivation | 5 likert | 21 | 9 | 8 |
| SUM | | 143 | 92 | 69 |

3.3 Exploratory Factor Analysis

The principal factor analysis was conducted according to the following rules. The rotation is Promax Rotation; The number of factors is decided when an eigenvalue is just greater than 1.0; The factor loadings should be more than.35. Item selection was repeated until these conditions were met.

As the result of exploratory factor analysis, the final number of each subscale is shown in table 1. The factors extracted from each subscale are interpreted, as shown in the followings.

Learning Strategies (10 factors)

- (Strategy 1) Positive Problem Solving Strategic Use (STR) : 10 items
- (Strategy 2) Rational Planning STR: 3 items
- (Strategy 3) Positive Feeling-oriented STR:4 items

- (Strategy 4) Learning through Other-Regulation and Social Interactions STR:6 items
- (Strategy 5) Semantic or POS Association STR : 3 items
- (Strategy 6) Analytic Grammar Learning STR : 5 items
- (Strategy 7) Mnemonics STR : 3 items
- (Strategy 8) Practical Writing STR :2 items
- (Strategy 9) Avoidance STR : 3 items
- (Strategy10) Repetition STR : 2 items

Learning Anxiety (3 factors)

- (Anxiety 1) In-class Anxiety : 7 items
- (Anxiety 2) Speech Anxiety: 3 items
- (Anxiety 3) Avoidance Derived from Anxiety:2 items

Learner Preference (2 factors)

- (Preference 1) Unwillingness to take risks and Anxiety : 5 items
- (Preference 2) Preference for English Learning : 3 items

Motivation (2 factors)

- (Motivation 1) Integrative Motivation: 5 items
- (Motivation 2) Instrumental Motivation: 3 items

3.4. Correlations between each factor scores and TOEIC scores

We examined whether or not the extracted 17 factor scores are correlated with TOEIC scores. Overall, those factor scores tend to be slightly correlated with TOEIC scores.

First, the more advanced students become, the more frequently they are likely to use learning strategies, although the frequency of their use of autonomous learning strategies as well as repetitive learning strategies are not statistically correlated with their proficiency level.

Second, there is a statistical correlation between the proficiency level and the degree of learner anxiety, which suggests that students whose proficiency is relatively low are prone to feel anxious while learning English.

Third, there is a statistical correlation between learner preference and proficiency, which suggests that students with a high level of proficiency tend to be fond of English classes or tasks.

Fourth, the degree of motivation does not correlate with the level of proficiency. That is, the high proficiency level of students does not necessarily imply that they have motivation higher than that of low proficiency level students.

4. Diagnostic Sheet

By obtaining all the 17 factors of learner strategies, anxiety, preference, and motivation in this study, we conducted a further factor analysis in order to examine the relationship among these factors, hoping that we can bring to light unknown learners' characteristic traits. As a result, we were able to extract four factors: "anxiety and passiveness"; "interest and attention to English learning"; "communication and authenticity orientation"; and "usage of analytic and cognitive strategies".

We created a diagnostic sheet in order to help students reflect upon their individual characteristics. Another noteworthy feature of this diagnostic sheet is that it will also be useful for language teachers to provide students with feedback on their learning processes as well as to design syllabi according to their individual needs or strengths.

5. Conclusion

This study identified the significance of holistic approach to seeing a bigger picture of Japanese EFL learners' IDs and provided an instance of diagnostic feedback based on the results of the questionnaire. This sheet should encourage language teachers as well as language learners to pay more attention to possibilities for individualized feedback or advice.

However, it must be noted that language teachers and learners must not rely too much on the results of the diagnostic sheet. That is because the results could be so delicate, flexible, and easily biased by one's affective variables. Some learners are likely to answer the questionnaire based on one's biased self-image. Moreover, considering learners' flexible nature, for example, students who are estimated to have intense negative anxiety are not always anxious when it comes to the particular situation. Therefore, we propose that teachers should adjust the results of this assessment during the process of interaction with students based on teachers' experience and educated intuition, (although we are improving the accuracy and reliability of the diagnosis by refining the items). We hope this diagnostic sheet can encourage and promote the rapid implementation of the language teaching from the perspective of learners' individual differences. Researchers, language teachers and language learners should work together and make concerned efforts for individualized teaching and learning.

6. References

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