

## **A diagnosis of Japanese EFL Learners' Individual Differences**

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### **1. Purpose**

The purpose of this study is two-fold: 1) to explore individual differences of Japanese EFL learners by focusing on learning strategies, learner anxiety, learner preferences, motivation and learning styles; and 2) to create a diagnostic sheet according to our research results and propose a pedagogical approach that is grounded in learners' individual differences (hereafter, Ids).

A noteworthy feature of this approach is that learners, (i.e., the participants of the survey) can receive automatic feedback individually and find out how to cope with their 'preferred' or 'disliked' strategies and how to manage their own anxiety in addition to what kind of learning methods or environments motivate them. Our learner-centered approach should hopefully raise some awareness of individual needs and trigger responsibilities for their own learning.

Another advantage is that teachers' feedback can be adjusted according to learners' IDs. Since it takes too much time to immediately identify and observe Ids of each student, this diagnostic sheet will help. Teachers should not only try to provide better teaching methods, but they, as successful language learners, need to dynamically guide learners to become more independent (and interdependent) learners, for example, by suggesting how to use various strategies effectively and efficiently.

### **2. Introduction**

Ids researchers have so far conducted studies on various dimensions of learners' characteristic traits by referring to social, affective and cognitive factors of language learners (Messick, 1976; Oxford, 1992; Cohen et al., 2000). When addressing language learners' ids, we, both language teachers and language researchers, need to have a global perspective of learners' characteristic traits.

Various pedagogical reforms have been brought about by information communication technologies (Herring, 1996). Educational reformers in Japan introduced and developed a wide range of student-centered learning tools or environments such as computer-assisted language learning, e-learning systems, ubiquitous learning tools using mobile phones (Urano, 2003), cross-cultural distance learning (Nakano, 2003), and Moodle-based open course management (Hamaoka, 2006) in the Japanese EFL contexts. Thus, learner-centered approach is gradually highlighted.

Against this background, many language teachers shed some light on such concepts as learner-centeredness (Tudor, 1997) and learner autonomy (i.e., self-paced learning) (Benson, 2001). Therefore, there is a pressing need of instructional methodology which can encourage learners to become more independent, interdependent and successful learners of English. Therefore, this study proposes one feasible autonomy environment, where language learners, teachers and researchers work together as a team to create independent learners of English.

### 3. Diagnostic feedback

The flow of a traditional questionnaire research can be schematized as in Fig.1. First, data collection is conducted. Then, data is put into computers for statistical analysis. Finally the results are interpreted. The research findings are not necessarily reflected in common classroom activities. It takes too much time for a language teacher to give individual students feedback on the research results.

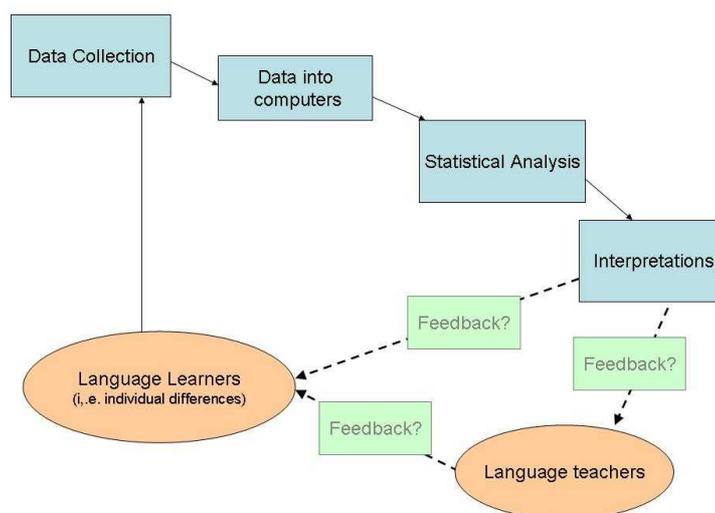


Fig.1. Traditional flow of individual differences research

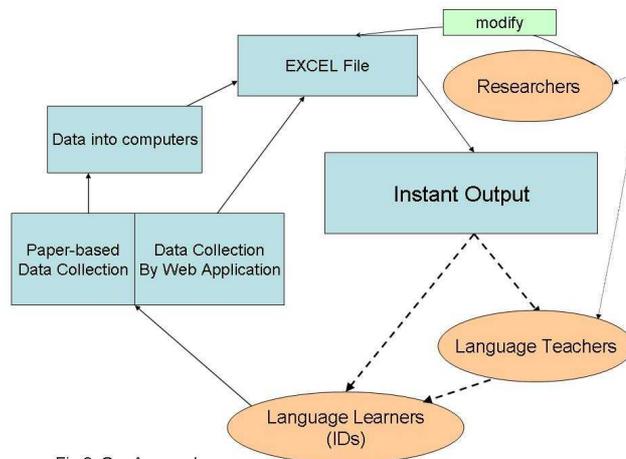


Fig.2. Our Approach

Our approach, on the other hand, can be described as in Fig.2. Data is collected in computer rooms via a CGI-programmed application. Data is accumulated in a CSV file (Fig. 3). Then, we paste obtained data on to the Excel file (Fig.4) and individual feedback is instantly and automatically produced (Fig.5). In the following week of the data collection, we will print it out and give this diagnostic sheet to all participants.

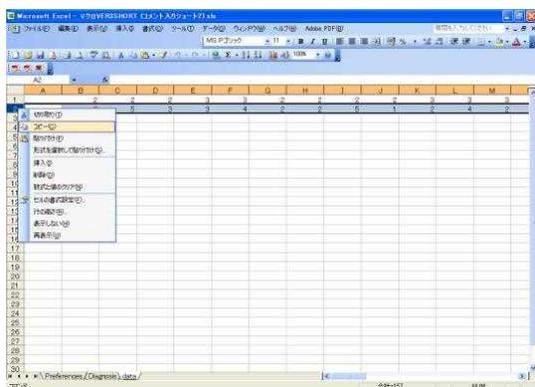


Fig. 3 Data obtained via a CGI-programmed application



Fig.4 Paste data on to the excel file

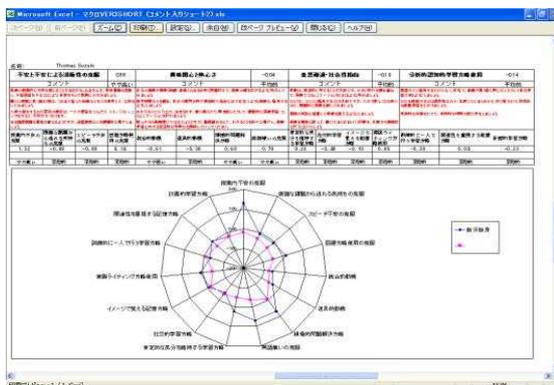


Fig 5. An instance of automatic feedback in the case of Thomas Suzuki (Pseudonym)

In Fig.5, this diagnostic feedback indicates Thomas Suzuki's tendency. According to the diagnosis, he seems to be able to manage his own anxiety and he likes learning English generally, but he is not very diligent and oblivious of strategic use. Therefore, he is encouraged to use strategies more often. Strategies are recommended according to Ids. One can visually compare and contrast one's scores and his/her peers' scores, because the average scores are also given in the form of radar chart. The main purpose of this sheet is to give individual learners a chance to reflect upon their own learning rather than to stereotype them. Therefore, at the time of feedback, students should know the following: 1) the results provide only a tendency; 2) the students have the potential to become more flexible and adjust themselves; and 3) successful and independent learners can be flexible according to a specific task or a context of situation and adjust the extent of how much one should be active or passive, analytic or holistic, and social or independent.

Now, let us turn our attention to the development of a diagnostic system by making use of PHP web application. Learners can be given a diagnosis immediately after answering the questionnaire. This flow is described as in Fig.6.

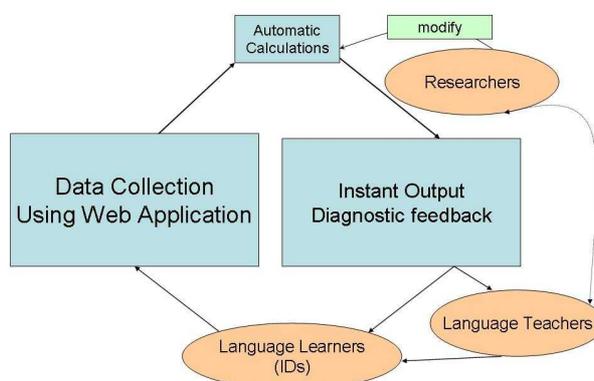


Fig. 6 Our flow (2): Web Application

It can be noted that this system is also convenient for researchers because data is automatically accumulated in database. Moreover, it is easy to collect and profile data from large sample.

#### 4. Questionnaire Items

We have so far conducted a questionnaire targeted at 1500 university students from 4 different universities. “Long version” and “short version” are available. In the long version, subsets of learners’ strategic use, anxiety and motivation are separately assessed. The short version cuts down the number of items but simultaneously measures multi-dimensional aspects of L2 (i.e., preference, motivation, anxiety, strategic use). Items used in the short version are carefully selected according to the results of factor analysis and IRT analysis. The number of questionnaire items fluctuates every year, as shown in Table 1.

The original number of short version was reduced from 192 to 69 items in Ver. 2. In Ver. 3, several items are excluded, and 21 motivation items were added. As a result, the total number of Version 3 slightly increased. Ver. 4 drastically cut down the number to 54 by making use of IRT equating. We limited the number of items per factor to less than 4 items. The details of each subscale are shown in 4.1.

Table 1 Questionnaire Items ( changed from Tsutsui et al., 2006)

Subscale	Long Version	Short Ver.1	Short Ver.2	Short Ver.3	Short Ver.4
Learning Strategies	62	62	41	32	25
Learner Anxiety	12	12	12	11	11
Preferences	9	9	8	8	
Motivation	30	9	8	30	18
Total	113	92	69	81	54

##### 4.1 Subscale items

The items of learning strategies are selected from the Japanese translated version of Strategy Inventory for Language Learning (SILL: Oxford, 1989); (ESL/EFL Version 7.0 : Wakamoto et al., 1994、 Yukina, 2003).

Learning Anxiety is selected from the Japanese translation version of Foreign Language Classroom Anxiety Scale (FLCAS: Horwitz, 1986, Yukina, 2003).

Learning Preferences concern itself in (is related to) Preliminary Measurement for Learner Preference (PMLP:Ely, 1986) . We used reliable items with special reference to the results of Yukina’s (2003) factor analysis.

Motivation is taken from the studies of Yukina (2003) and Noels et al. (2000)

## 4.2 Extracted factors (Short Version 4)

Extracted factors are shown in Table 2.

Table 2 Extracted factors

Original Subscale	Name	Num of Items
(Strategy 1)	Rational Planning STR	3
(Strategy 2)	Communication STR	4
(Strategy 3)	Social STR	3

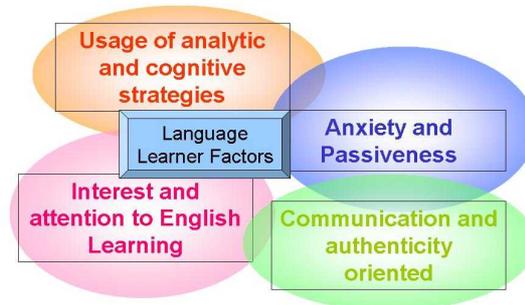
Table 2 Extracted factors (cont.)

Original Subscale	Name	Num of Items
(Strategy 4)	Associating Memory STR	3
(Strategy 5)	Analytic Grammar Learning STR	3
(Strategy 6)	Anxiety Management STR	3
(Strategy 7)	Practical Writing STR	2
(Strategy 8)	Repetition STR	2
(Strategy 9)	Mnemonics	3
(Anxiety 1)	Mastery of Class Avoidance	3
(Anxiety 2)	Mastery of Speech Anxiety	3
(Anxiety 3)	Mastery of In-class Anxiety	3
(Anxiety 4)	Tolerance of Complexity	2
(Motivation 1)	Integrative and identified regulation	4
(Motivation 2)	Intrinsic MTV from desire to learn and accomplish	4
(Motivation 3)	Instrumental MTV	4
(Motivation 4)	Intrinsic MTV from stimulation	3
(Motivation 5)	Introjected regulation	3

## 4.3. Secondary factor analysis

As a result of secondary factor analysis of 18 factors shown in 4.2 (Principal factor analysis with promax rotation, eigenvalue >1, factor loadings >.35), 4 factors were extracted. Namely, our diagnostic sheet can identify 4 dimensional aspects of ids of Japanese EFL learners. We interpreted these 4 dimensional factors as “Anxiety and passiveness derived from anxiety”, “Communication and authenticity orientation”, “Motivation and attention to English learning”, “Use of analytic and cognitive strategies”.

General tendencies our diagnostic sheet can depict.



### 5. Preliminary Experiment: Significance of feedback.

Lastly, the importance of feedback is discussed. In order to show to what extent a questionnaire research can be more reliable, we compared the generalizability coefficient (Brennan, 2001) of “Feedback group” with that of “No feedback group”. “No feedback group” participated in the questionnaire, but they were not informed that they would be given feedback. “Feedback group”, on the other hand, was initially notified of a diagnostic feedback after the questionnaire. The numbers of participants are the same (N=445) and randomly chosen. The items are 25 SILL items, which proved to be unidimensional by IRT analysis. Our finding supported our initial speculations and proved that the generalizability coefficient of “Feedback group” is higher than that of “No feedback group”, as shown in fig. 7. Thus, providing feedback to learners has a positive effect on questionnaire research itself.

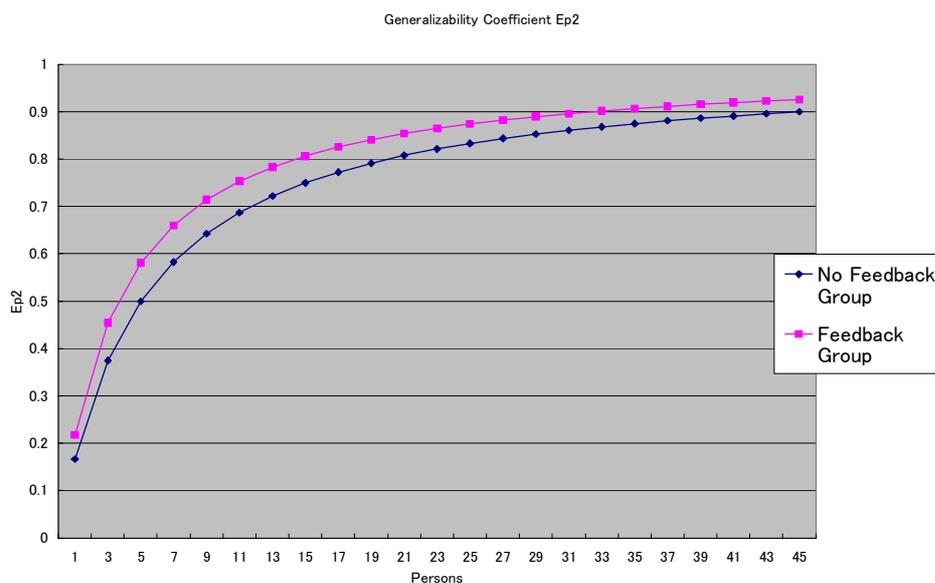


Fig. 7 Generalizability Coefficients

## 6. Conclusion

This study proposed one case study of diagnostic approach to learners' Ids and showed how important feedback of a questionnaire research can be, from the perspectives of autonomy and questionnaire reliability. Diagnostic sheets can encourage individualized learning, which meets current educational trends in Japan. However, not all students are dependent enough to identify the next pathway to learning. That is when teachers come in to help learners to be more independent. In explicit terms, they need to encourage learners to maintain their learning (for example, to use beneficial strategies) either inside or outside class.

To sum up, language teachers, researchers, and learners work as a team to make individual learners equipped with skills which allow them to be more proficient, autonomous and ultimately successful learners of English, as schematized in Fig.8.

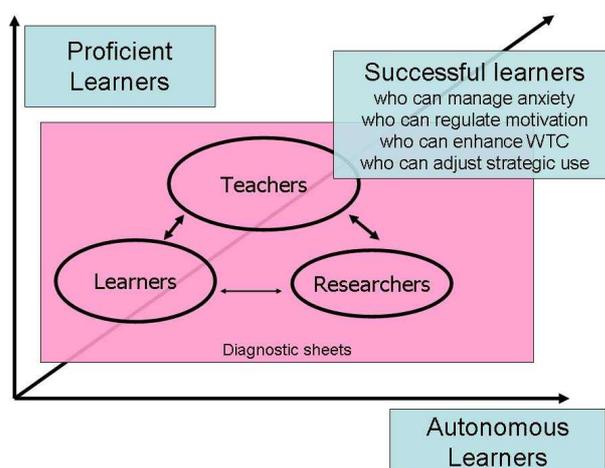


Fig 8 Summary of our approach

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