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English Learning Strategies of Indonesian University Students Across Individual Differences

Junaidi Mistar
Islamic University of Malang (UNISMA), Indonesia
Monash University, Australia

This study investigated the predictability of English learning strategy use from individual differences, including language aptitude, personality traits, attitudes, and motivation. Three hundred and eighty-six students from three universities in Malang, East Java, Indonesia, participated in the study. The Modern Language Aptitude Test (MLAT), the short form of the revised Eysenck Personality Questionnaire (EPQ-R Short Form), the Attitude/Motivation Test Battery (AMTB), and the Strategy Inventory for Language Learning (SILL) were administered for data collection. Factor analysis and standard regression analyses were used to analyse the collected data. Four factors (anxiety about learning English, attitude and learning orientation, language aptitude, and personality traits) were identified from the investigated predictor variables. The regression analyses showed that the combination of the four extracted factors contributed significantly to the use of learning strategies. Of these four factors, moreover, the first two proved to be the best predictors of strategy use. Implications of these findings as well as their relation to previous findings are discussed.

Introduction

According to Stern (1983), learning outcomes are much influenced by the learning process, and the learning process is affected by the learners' internal characteristics and learning conditions. Earlier, Rubin (1975) had noted that exploring the students' learning process could increase the success of classroom teaching-learning activities. The two assertions indicate the significance of studies on learning strategies.

In the late 1970s and early 1980s, research on learning strategies focused on describing the strategies of successful language learners (see Chesterfield & Chesterfield, 1985; Naiman, Fröhlich, Stern, & Todesco, 1978; O'Malley, Chamot, Stewner-Manzanares, Russo, & Küpper, 1985; Rubin, 1975; Stern, 1975). More projects in the field were set out in the early 1990s, leading Skehan (1991) to claim the period was characterised by "a near-explosion of activity" (p. 285). However, despite this extensive research, according to Oxford (1990a), the topic remains like "a fragmentary, unfinished mosaic" (p. 67). This unfinished mosaic seems to be in part due to the fact that so far research on learning strategies has simply described what they are and how they correlate with language proficiency. Not very much research has been carried out to discover the effect of individually different variables on strategy use. As Skehan (1989, p. 96) stated, "In the main, strategies researchers have simply gathered data. It may be, however, that there are systematic relationships between other IDs (*individual differences*) and a predisposition to use certain strategies" (my italics).

In this regard, a few studies have been conducted to find factors affecting strategy choice. Oxford and Nyikos (1989), for example, investigated the effect of motivation, self-proficiency rating, course status, gender, and years of study on learning strategies use. More than 1,200 undergraduate students of seventeen to twenty-three years of age participated in the study. The old version of the Strategy Inventory of Language Learning (SILL) was used for collecting data on learners' learning strategies. The SILL consisted of five factors: (1) formal rule-related practice strategies, (2) functional practice strategies, (3) resourceful, independent strategies, (4) general study strategies, and (5) conversational input elicitation strategies. Moreover, learners' perceptions of their own motivation and proficiency rating, course status, years of study, and sex were obtained from background questionnaires.

Oxford and Nyikos' analyses found that learning motivation was the single most powerful influence on the choice of language learning strategies. It had extremely significant effects on four of the five factors (factors 1, 2, 4, and 5) and a nearly significant effect on factor 3. Language proficiency self-ratings also significantly affected the use of learning strategies. Speaking proficiency ratings were found to highly significantly affect the use of strategies related to factors 2, 3, 4, and 5 and almost significantly affect the use of strategies linked with factor 1. Reading proficiency ratings had very highly significant effects on factors 1, 2, 4,

and 5, whereas listening proficiency ratings were correlated significantly with the use of strategies connected with factors 3 and 4.

Furthermore, it was also found that students who elected to learn the language (elective status) used strategies linked with factors 2 and 4 much more often than students who learned the language as an academic requirement (required status). Years of learning the language were other factors that significantly affected the frequency of use of learning strategies. Learners with longer learning experience employed communicative-oriented strategies (factors 2 and 5) more often than did learners with less experience. Lastly, profoundly significant differences of strategy use were found between males and females. It was also reported that females used more strategies related to factors 1, 4, and 5 than males did.

Ehrman and Oxford (1990) investigated the effect of psychological types on language learning strategies. As a part of a larger project, the sub-sample of the study consisted of 20 learners at the Foreign Service Institute, USA. Learners' psychological types were measured by means of the Myers-Briggs Type Indicator (MBTI), which measures four dimensions of personality types: extroversion/introversion, sensing/ intuition, thinking/feeling, and judging/perceiving. Students' learning strategies were measured by the Strategy Inventory for Language learning (SILL). Unstructured interviews were conducted as a continuous process during the long-term intensive training.

The study indicated that extroverts reported using social strategies quite consistently, while introverts tried to avoid such strategies. Instead, introverts applied metacognitive strategies more than did extroverts. Furthermore, sensing learners were found to strongly like memory strategies, while intuitive learners made extensive use of compensation strategies and some use of affective strategies. Compared to feelers, moreover, thinkers reported strong preference for cognitive strategies, while feelers rejected all cognitive strategies. Lastly, judgers indicated clear preference for metacognitive strategies, which perceivers typically rejected. On the contrary, perceivers preferred compensation strategies, which were strongly rejected by judgers.

A more recent study by the same researchers (Oxford & Ehrman, 1995), also at the Foreign Service Institute, extensively investigated other factors affecting the use of language learning strategies. The factors covered in the study were teacher perceptions, gender, educational background, previous languages, weeks of training, language difficulty,

general learning and study strategies, aptitude, learning styles, personality type, ego boundaries, and motivation and anxiety.

The study found that cognitive strategy use was significantly correlated with teachers' ratings of learners as being effective learners and of having high aptitude for language learning. In the case of gender, only compensation strategies were linked to gender with females appearing to use these strategies significantly more frequently than males. It was also found that cognitive and metacognitive strategies correlated significantly with educational background and the number of languages previously learned. In terms of the correlation between language learning strategies and general learning and study strategies, it was found that the greatest correlation occurred for metacognitive strategies, cognitive strategies, and social strategies.

Another finding of the study was that the cognitive strategies significantly correlated with Part I (number learning) of the Modern Language Aptitude Test (MLAT). Surprisingly, significant negative correlations were found between compensation strategies and Part V (paired associates), and between affective strategies and Part IV (grammatical sensitivity in sentences) of the MLAT. Persistence as a type of learning style correlated significantly with a number of SILL factors: metacognitive, social, cognitive, affective, and memory strategies. In relation to personality types, the use of cognitive strategies related mildly to preference for intellectual approach to learning new things. Moreover, learners who reported using frequent social strategies tended to report themselves as expressive and realistic.

In regard to the relationship between learning strategies and motivation and anxiety, it was found that a positively significant correlation appeared between cognitive and metacognitive strategies on the one hand and anxiety about classroom speaking, intrinsic motivation, and positive belief about oneself on the other. Compensation strategies positively correlated with the desire to use the language outside the class and negatively correlated with anxiety about outcomes. These results indicate that learners with cognitive strategies and metacognitive strategies tend to be internally motivated and self-confident. Meanwhile, learners with compensation strategies tend to use the language outside the classroom very frequently.

Despite the fact that learning strategy has been an issue investigated extensively in Western countries since 1970s, it has not been very much studied among learners of English as a foreign language in Indonesia until

the late 1990s. Djiwandono (1998), for example, investigated the predictability of oral communication proficiency from learning strategies and degree of extroversion. Using 50 students at the Widya Karya University, Malang, Indonesia, as the subjects, the study found that diversity, one out of three dimensions of strategy use, and expressiveness, one out of seven indicators of extroversion, turned out to be the best predictors of oral communication proficiency. These two predictors explained 48% of the total variance of the dependent variable. While Djowandono used learning strategy as a predictor variable and proficiency as a criterion variable, Huda (1998) did the other way around. His study treated learning strategy as the dependent variable and speaking proficiency as well as learning styles — reflectivity and impulsivity — as the independent variables. The subjects consisted of 30 students of the English Education Department, Institute of Teacher Training and Education at Malang, Indonesia. He found that learners with good speaking proficiency used fewer strategies than their fellow learners with fair speaking proficiency did. This finding contradicts a claim that more proficient learners use more varieties of strategies (Oxford & Crookall, 1989; Oxford, 1993). In regard to the role of learning styles, moreover, no consistent relationship between learning styles (reflective or impulsive) and learning strategies was found.

From the studies reviewed above, it can be inferred that the choice of learning strategies seems to be associated with a number of factors. These include attitude and motivation, the status of the language being learned, the number of languages being learned, past language learning experience, language proficiency, gender, and language aptitude. However, several other studies are still required, particularly to provide more evidence on the relationship between learners' language aptitude and personality traits on the one hand and learning strategy use on the other hand. As Ellis (1994) stated,

> There is now evidence to suggest that a number of individual learner differences and situational factors are related to strategy use. Learners' beliefs about language learning, the learner factors of age and motivation, and personal background emerge as important factors. So far, however, there is only weak evidence to connect the learners' affective states, language aptitude, learning style, and personality to learning strategy use. (p. 545)

Oxford (1990a) has also mentioned the need for research to find the relationship between aptitude and learning strategies: "Relationships

between strategies and aptitude have hardly been studied, because researchers have not adopted a conceptual framework linking these variables. Results of the very few studies relating strategies and aptitude are inconsistent" (p. 108).

Thus, the present research was carried out to provide further evidence on the validity of findings obtained in the previous studies by using different groups of samples. In this regard, the study is directed at finding the answers to the question: "Among Indonesian university students, what factors underlying language aptitude, personality traits, and attitude/ motivation attributes influence the use of English learning strategies?"

Methodology

Participants of the Study

The participants were 386 students consisting of 113 males and 273 females. They were:

(1) students at the English department, Islamic University of Malang (UNISMA), who studied English as a major at a teacher-training department (n = 124);
(2) students at the English department, Gajayana University (UNIGA), Malang, who studied English as a major at a non-teacher training department (n = 126);
(3) students at the Accounting department, Polytechnic, Brawijaya University (UNIBRAW), Malang, who studied English as a minor subject (n = 136).

They were from the second, third, and fourth year levels as presented in Table 1.

In regard to the age of the participants, the youngest were 18 years (n = 4) and the oldest was 30 years (n = 1), whereas the majority were between 19 and 23 years (n = 368). Thus, fourteen participants were between 24 and 29 years of age. In terms of perception of the importance of being proficient in English, most of them, 78.5% (n = 303) thought it very important and 21.2% (n = 82) thought it important, while only .3% (n = 1) considered it not so important. Moreover, only 32.9% (n = 127) reported that English was the only foreign language they had studied or were studying, while the other 67.1% (n = 259) reported that they had studied or were studying one or more other foreign languages such as Arabic, German, or Japanese.

Table 1 Participants of the Study

Institution	2nd Year		3rd Year		4th Year		
	Male	Female	Male	Female	Male	Female	Total
English Department, UNISMA	16	34	9	25	7	33	124
English Department, UNIGA	18	30	11	24	16	27	126
Accounting Department, Polytechnic, UNIBRAW	15	52	21	48	–	–	136
Total	49	116	41	97	23	60	386

Another important characteristic of the subjects was that the Indonesian language is not the first language of most of them. About 74.4% (n = 287) mentioned that their first language was a local language such as Javanese and Madurese and only 13.5% (n = 52) stated that Indonesian was their first language. Moreover, 10.9% (n = 42) described themselves as being bilingual of a local language and Indonesian and 1.3% (n = 5) mentioned themselves as being multilingual since their childhood.

Instruments

Instrument for Measuring Language Aptitude

The Modern Language Aptitude Test (MLAT) (Carroll & Sapon, 1959) was administered to collect data of the subjects' language aptitude. However, as it is originally designed and validated for native or near native speakers of English, it is not applicable to be used for Indonesian learners of English unless it is translated.

The test consists of five sections: Number Learning, Phonetic Script, Spelling Clues, Words in Sentences, and Paired Associates. Out of these five sections, only Words in Sentences and Paired Associates were considered translatable. The first, Words in Sentences, is believed to measure grammatical sensitivity, and it presents the subjects with a key sentence in which one of its words is written in capital letters and underlined. In addition, one or more response sentences are provided with five words underlined. In the administration of the test, the subjects were asked to find the underlined word in the response sentence(s) that served the same function as the underlined word in the key sentence. For example, the key sentence says, "Mary is cutting the APPLE" and the response sentence is, "My brother (A) John (B) is beating his (C) dog (D) with a big

stick (E).” The second one, Paired Associates, measures the ability to memorise new foreign language words. In this case, the subjects were provided with a list of 24 Indonesian-English vocabulary items and asked to recognise them in two minutes. Then they were tested by means of multiple-choice items.

In its original form, when administered to college students, the internal reliability coefficients of the two parts of the test were found to be .94 for both males and females (Carroll & Sapon, 1959, p. 17). Thus, it can be argued that the instrument is free from items that do not necessarily measure the intended traits.

Instrument for Measuring Personality Traits

The translated version of the short form of the revised Eysenck Personality Questionnaire (EPQ-R Short Form), as devised by Eysenck and Eysenck (1991), was used for measuring personality traits. This questionnaire measures three personality traits: (a) tough-mindedness or psychoticism denoted as *P*, (b) extroversion denoted as *E*, and (c) emotional stability or neuroticism denoted as *N*. In addition, a measure of degrees of dissimulation (lie scale) is included to measure a tendency of the subjects to “fake good” (Eysenck & Eysenck, 1991, p. 13). Each of these traits and the lie scale is measured in 12 items resulting in a total of 48 items. The subjects were required to answer *yes* or *no* to each question such as “Do you enjoy meeting new people?” and “Do you often feel lonely?”

The internal reliability of the scale was measured by administering the questionnaire to subjects of different age groups (16 to 70 years of age). The coefficients were found to be .62, .88, .84, .77 for the *P*, *E*, *N*, and *L* respectively for the males and .61, .84, .80, and .73 for the females (Eysenck & Eysenck, 1991, p. 23). These figures suggest that all items in each of the scales measure a similar trait.

In the present study, however, only measures of degree of extroversion (*E*) and emotional stability (*N*) were analysed. According to Eysenck and Eysenck (1991), “While not wishing to deny the existence and importance of factors additional to *E* and *N*, we believe that these two factors contribute more to a description of personality than any other set of two factors outside the cognitive field” (p. 2).

Instrument for Measuring Attitude/Motivation Attributes

The latest version of the Attitude/Motivation Test Battery (AMTB) (Gardner, Tremblay, & Masgoret, 1997) was translated into Indonesian

and used to collect data of the subjects' attitude/motivational attributes. Some modifications were made to suit the Indonesian learners of English. In this case, any statement dealing with French such as the French language and the French Canadian people were changed into the English language and the native speakers of English respectively.

The modified version contained 76 items measuring nine attributes: attitude toward native speakers of English, attitude toward learning English, desire to learn English, English class anxiety, English use anxiety, interest in foreign languages, instrumental orientation, integrative orientation, and motivational intensity. The subjects were required to provide a response to each statement by indicating the extent of their agreement or disagreement. The scale was a Likert type consisting of 7 responses: *strongly disagree*, *moderately disagree*, *slightly disagree*, *neutral*, *slightly agree*, *moderately agree*, and *strongly agree*.

The reliability indexes, as indicated by internal consistency indexes (Cronbach alphas), were found to be .49, .72, .61, .74, .83, .57, .51, .59, and .70 respectively for the nine attributes as mentioned above. When taken together, the reliability index was .91. Thus, generally speaking, the items in the instrument provided significant contribution to the measurement of the intended traits. Lower reliability coefficients of each section were obtained due to a decrease in the number of items involved in the computation.

Instrument for Assessing Learning Strategies

The 50-item Strategy Inventory for Language Learning (SILL) as developed by Oxford (1990b) was used. The questionnaire is based on the classification of learning strategies into direct strategies and indirect strategies. Direct strategies are strategies "that directly involve the target language" (Oxford, 1990b, p. 37), whereas indirect strategies are those that "support and manage language learning without (in many instances) directly involving the target language" (Oxford, 1990b, p. 135).

The direct strategies consist of three sub-categories of strategies: memory, cognitive, and compensation. Memory strategies are measured in nine items assessing the extent to which students employ various strategies to remember more effectively. Cognitive strategies are measured in fourteen items assessing to what extent students use mental processing strategies. And, compensation strategies are assessed in six items measuring the extent to which students compensate for missing information.

The indirect strategies also contain three sub-categories: metacognitive, affective, and social. Metacognitive strategies are measured in

nine items determining to what extent students organise and evaluate their learning. Affective strategies are measured in six items assessing the extent to which students manage their emotion in learning. And, social strategies are also assessed in six items measuring how frequently students learn the language with others such as their peers and proficient users of the target language.

The instrument was also translated into Indonesian. In its administration, the subjects were required to give a response to each statement on a five-point scale: never or almost never true of me, usually not true of me, sometimes true of me, usually true of me, and always or almost always true of me.

The reliability of the instrument has been found to be high when measured from different groups of samples in Asia as well as other parts of the world (see Oxford & Burry-Stock, 1995). The present study found a reliability index of .92 when all items were taken together and reliability indexes of .74, .80, .66, .85, .61, and .72 for items of memory, cognitive, compensation, metacognitive, affective, and social strategies respectively.

In addition to the four main instruments above, a background questionnaire was also devised to gather information on the participants' background. Included in this instrument were such questions as gender, their perception of the difficulty level of English, their perception of the importance of being proficient in English, and other foreign languages they had studied or were studying.

Data Collection and Analysis

The data collection procedures were carried out from mid-November to late December 1999. As the participants were clustered into classes of 20 to 30 students, the researcher came into their classroom just after a teaching-learning process was over. The Modern Language Aptitude Test (MLAT) was administered first because it was a standardised test so that a rigid control of its administration was maintained. It took twenty-five minutes to complete. Then, a booklet of questionnaires was distributed focussing on personal background, personality, attitude and motivation, and learning strategy. Two hours was devoted to the completion of the questionnaires.

The subjects' work was scored so that each of them had a score for each of the twenty variables under investigation. The collected data were analysed using regression analyses to measure the predictability of

learning strategies from the thirteen variables of language aptitude, personality traits, and attitude and motivation. In this case, instead of working with those thirteen variables, the underlying factors of those variables were discerned using the Principal Component Analysis (PCA) and the resulting factors were regressed against strategy categories. Prior to the factor analysis, the factorability of the collected data was inspected using three criteria. They were that (1) the correlation matrix should contain any one or more coefficient of .3 or above, (2) the Bartlett's test of sphericity should be significant, and (3) the Kaiser-Meyer-Oklin (KMO) value should be at least .6 (Pallant, 2001).

Results

Analyses of the suitability of factor analysis suggest that the data were factorable. Inspection of the correlation matrix revealed the presence of twenty-seven coefficient indexes equal to or greater than .3 as appears in Appendix 1. Meanwhile, the Kaiser-Meyer-Oklin (KMO) measure of sampling adequacy resulted in a value of .815 and the Bartlett's test of sphericity found a significance level of .000. These three forms of evidence guarantee a good factor analysis for the correlation matrix.

The Principal Component Analysis (PCA) revealed the presence of four components with initial eigenvalues — values representing how much variance a component accounts for — greater than 1 explaining a cumulative variance of 64.1%. The variances being explained by each of the four extracted components were 33%, 11.5%, 10.7% and 8.9% respectively. Appendix 2 presents a table of the rotated component matrix containing the loadings of each of the predictor variables on the four factors as obtained from Varimax Rotation Method. Factor 1 was found to obtain high loadings (greater than ± .3) from six variables with appreciable loadings from attitudes toward learning English, desire to learn English and interest in foreign languages. The very strong loadings were from English class anxiety, English anxiety, and motivational intensity. Thus, the first factor could be best described as a factor of *anxiety about learning English*. This anxiety carries a motivational component suggesting that an individual with a high motivational intensity shows a low degree of anxiety.

Factor 2 obtained high loadings from seven variables, of which five variables contributed strong loadings. They were attitude toward native speakers of English, attitude toward learning English, desire to learn

English, instrumental orientation, and integrative orientation. Thus, this factor could be best defined as an *attitude and learning orientation* factor. This factor was also found to carry components of interest in foreign languages and motivational intensity.

Two variables, which were measures of language aptitude, loaded very highly on factor 3. These variables were words in sentences, which was believed to measure grammatical sensitivity, and paired associates, which was supposed to measure an ability to memorise words of a foreign language. Thus, the term *language aptitude* could be best used to describe factor 3.

Finally, factor 4 also obtained very strong loadings from two variables, which were indicators of personality traits. Positive loading was from degrees of extroversion (EPQ E) and negative loading was from degrees of neuroticism or emotional stability (EPQ N). Thus, this factor could be defined as a factor of *personality traits*. These loadings suggest that extroverts — persons with high degrees of extroversion — tend to have low emotional stability and vice versa.

To assess the effect of the four factors on the use of learning strategies, standard regression analyses were performed and the results are presented in a table in Appendix 3. As the table shows, the coefficients of all of the seven regression analyses were found to be very significant (F = .000). This means that the combination of the four extracted factors contributed significantly to the use of learning strategies. The total variances of the use of learning strategies attributable to the variance of the combined four factors were 22.7%, 28.6%, 6.8%, 30.9%, 9.8%, and 21.9% respectively for the use of memory, cognitive, compensation, metacognitive, affective and social strategies.

Analyses of the relative importance of each predictor variable on the use of each strategy category revealed that only factors of anxiety about learning English and attitude and learning orientation were highly significant as the significance level of the obtained t values were .000. In this case, anxiety about learning English showed greater significance than attitude and learning orientation in the use of memory and cognitive strategies. In terms of the use of the other four strategy categories — compensation, metacognitive, affective and social strategies — attitude and learning orientation was found to show greater significance than anxiety about learning English. Even the effect of anxiety about learning English on the use of affective strategies was only significant at .10 level. Moreover, as far as the effect of factors of language aptitude was

concerned, it was found that this factor relatively significantly affected the use of compensation ($p < .102$) and social strategies ($p < .109$). Finally, the factor of personality traits did not significantly affect the use of any one of learning strategy categories.

Disregarding the strategy categories, the combination of the four factors was also found to significantly affect the use of learning strategies. The total variance of the use of overall strategies accounted for by the four factors was 35.2%. However, analyses of the relative importance of these factors revealed that only anxiousness in English learning and attitude and learning orientation provided highly significant contributions on the use of overall strategies.

In short, the present study found that relative to language aptitude and personality traits, the attitude/motivational attributes, which were described by the factors of anxiety about learning English and attitude and learning orientation, turned out to be the best predictors of learning strategy use.

Discussion

The discussion explores the position of the present findings relative to findings of previous studies as well as their practical implications for classroom learning strategy training.

As described earlier, the factor analysis of the thirteen variables that made up language aptitude, personality traits, and attitude/motivation constructs revealed the presence of four factors: anxiety about learning English, attitude and learning orientation, language aptitude, and personality traits. The linear combination of these four factors was found to be a significant predictor of the use of learning strategies. An analysis of the relative importance of each factor, however, indicated that only the factors of anxiety about learning English and attitude and learning orientation, which were extracted from attitude/motivational attributes, significantly influenced learning strategy use. This finding highlights the role of attitude and motivation in second/foreign language learning as proposed by social psychologists. As Gardner (1985, p. 56) has stated, "attitude and motivation are important because they determine the extent to which individuals will actively involve themselves in learning the language." Schulz (1991) has acknowledged that the more motivated the students are, the more input they seek and the more communicative interactions they are willing to engage in.

Regarding the role of language aptitude, Oxford and Ehrman (1995) reported that compensation strategy use was linked with lower language aptitude. Their interpretation suggests that, because low aptitude students are aware of their weaknesses in learning a new language, they compensate with strategies such as guessing, making up new words, and using synonyms. However, it should be noted that language aptitude and general intelligence share a common 45% variance as found by Wesche, Edwards, and Wells (1982). If this relationship is considered, language aptitude should presumably correlate with the ability to engage in correct guessing or to create new words in a positive manner. In this regard, the present study, to a certain extent supports this presumption. Language aptitude, which formed one separate factor (factor 3), was found to significantly affect the use of compensation and social strategies at .10 and .11 level respectively. Thus, students with higher language aptitude show greater use of compensation strategies and engage in conversational activities more than students with lower language aptitude do. This finding agrees with Bialystok (1981), who considered the effect of language aptitude on strategy choice although she did not see it as being as influential as attitude.

Finally, this study underscores the effect of personality traits on learning strategy use. None of the strategy categories were significantly affected by personality traits. This finding contradicts that of Ehrman and Oxford (1990) which showed that extroverts prefer social strategies as they like social contact, whereas introverts prefer metacognitive strategies. Although Ehrman and Oxford's finding seems to be more logically acceptable than the finding of the present study, it does not mean that the finding of the present study is not useful at all. To an extent, this finding of insignificant effect of personality traits on strategy use may explain the inconsistence of the relationship between personality traits and success in second/foreign language learning. Whereas Rossier (1975) obtained significant correlation between extroversion/introversion and oral proficiency, Naiman et al. (1978) found no significant relationship between degrees of extroversion and proficiency. When the effect of the degree of extroversion was analysed in terms of its seven components of sociability, responsibility, impulsiveness, activity, expressiveness, reflectiveness, and risk-taking, Djiwandono (1998) found that only expressiveness was a reliable predictor of oral communication proficiency. An even more surprising finding comes from Busch (1982), who found

that extroversion showed a significant negative correlation with pronunciation. Thus, more evidence is still required on this matter to permit a conclusive result.

The findings of this study also suggest practical implications for classroom teachers of English in implementing strategy-training programs, particularly in Indonesian universities. They should not worry about their students' personality traits since these were not found to affect the ways they learn the language. Therefore equal attention could be provided irrespective of what personality trait a particular student is supposed to have. Moreover, the finding that language aptitude only marginally affects the use of compensation and social strategies implies that teachers do not need to pay special attention to their students' language aptitude. In general, students with different levels of language aptitude will perform learning strategies more or less equally. Special emphasis may be placed on the training of the use of compensation and social strategies for the students who display lower language aptitude. Finally, instructional activities should be carried out so that students develop or maintain favourable attitudes and their motivation is kept high. Students with positive attitudes and high motivation turn out to employ learning strategies extensively.

Conclusion

This study has demonstrated that, in the context of Indonesian university students learning English as a foreign language, attitude and motivation are the best predictors of their learning strategies and their effect is more significant than language aptitude. While aptitude is probably not a modifiable variable in second/foreign language learning, attitude and motivation are changeable. Thus, to encourage learners to use memory, cognitive, compensation, metacognitive, affective, and social strategies of learning English maximally, their attitudes should be fostered in a way that is favourable and they should be kept highly motivated in learning. In this manner, improvement in students' learning strategies can be achieved and, ultimately effective attainment of language proficiency can be expected.

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Junaidi Mistar is a lecturer in the English Department, Faculty of Teacher Training and Education, Islamic University of Malang (UNISMA), Indonesia. He is now undertaking his Ph.D. candidature at the Faculty of Education, Monash University, Australia. His research interests mainly deal with psychological aspects of language learning/teaching.

Appendix 1

Correlation Matrix

VAR	WIS	PAS	EXT	NEU	ANS	ALE	DLE	ECA	EUA	IFL	ISO	ITO	MIN
WIS	1.000												
PAS	.414	1.000											
EXT	.028	.025	1.000										
NEU	-.110	-.076	-.300	1.000									
ANS	.104	.087	.131	-.075	1.000								
ALE	.152	.108	.139	-.033	.491	1.000							
DLE	.165	.128	.118	-.054	.460	.699	1.000						
ECA	.088	.006	.174	-.189	.239	.385	.341	1.000					
EUA	.154	.034	.127	-.236	.306	.455	.353	.742	1.000				
IFL	.166	.191	.162	-.090	.435	.577	.553	.298	.412	1.000			
ISO	-.017	-.007	.109	.028	.275	.184	.232	.036	.085	.073	1.000		
ITO	-.016	-.041	.107	.007	.398	.406	.410	.242	.268	.379	.309	1.000	
MIN	.057	.063	.188	-.101	.385	.578	.534	.530	.517	.481	.080	.347	1.000

VAR: Variables
WIS: Words in Sentences
PAS: Paired Associates
EXT: Extroversion
NEU: Neuroticism
ANS: Attitude toward Native Speakers of English
ALE: Attitude toward Learning English
DLE: Desire to Learn English
ECA: English Class Anxiety
EUE: English Use Anxiety
IFL: Interest in Foreign Languages
ISO: Instrumental Orientation
ITO: Integrative Orientation
MIN: Motivational Intensity

Appendix 2

Rotated Component Matrix

No.	Variables	Factors			
		1	2	3	4
1.	Words in Sentences	–	–	.798	–
2.	Paired Associates	–	–	.827	–
3.	Extroversion	–	–	–	.779
4.	Neuroticism	–	–	–	-.767
5.	Attitude toward Native Speakers of English	–	.676	–	–
6.	Attitude toward Learning English	.535	.615	–	–
7.	Desire to Learn English	.435	.653	–	–
8.	English Class Anxiety	.842	–	–	–
9.	English Use Anxiety	.833	–	–	–
10.	Interest in Foreign Languages	.472	.512	–	–
11.	Instrumental Orientation	–	.669	–	–
12.	Integrative Orientation	–	.690	–	–
13.	Motivational Intensity	.703	.379	–	–

Extraction Method: Principal Component Analysis
Rotation Method: Varimax with Kaiser Normalisation

Appendix 3

Standard Regressions: Effects of Four Factors on Strategy Use

Dependent Variable: Memory Strategy Use

Multiple R	.484	***Analysis of Variance***			
R Square	.235		*df*	Sum of Squares	Mean Square
Adjusted R Square	.227	Regression	4	2565.539	641.385
Standard Error	4.690	Residual	381	8369.832	21.968
		Total	385	10935.370	
		F = 29.196		Significance *F* = .000	

Coefficients

Predictor Variables	*B*	*Std. Error B*	*Beta*	*t*	*Significance t*
Anxiousness in English Learning	2.097	.239	.393	8.778	.000
Attitude and Learning Orientation	1.500	.239	.281	6.280	.000
Language Aptitude	–.127	.239	–.024	–.532	.595
Personality Traits	2.454E-02	.239	.005	.103	.918
Constant	28.174	.239			

Dependent Variable: Cognitive Strategy Use

Multiple R	.541	***Analysis of Variance***			
R Square	.293		*df*	Sum of Squares	Mean Square
Adjusted R Square	.286	Regression	4	6356.135	1589.034
Standard Error	6.340	Residual	381	15325.370	40.224
		Total	385	21681.505	
		F = 39.505		Significance *F* = .000	

Coefficients

Predictor Variables	*B*	*Std. Error B*	*Beta*	*t*	*Significance t*
Anxiousness in English Learning	3.310	.323	.441	10.242	.000
Attitude and Learning Orientation	2.340	.323	.312	7.239	.000
Personality Traits	.219	.323	.029	.678	.498
Language Aptitude	.167	.323	.022	.517	.606
Constant	45.412	.323			

Dependent Variable: Compensation Strategy Use

Multiple R	.278	***Analysis of Variance***			
R Square	.077		*df*	Sum of Squares	Mean Square
Adjusted R Square	.068	Regression	4	465.376	116.344
Standard Error	3.820	Residual	381	5561.373	14.597
		Total	385	6026.749	
		F = 7.971		Significance *F* = .000	

Coefficients

Predictor Variables	*B*	*Std. Error B*	*Beta*	*t*	*Significance t*
Attitude and Learning Orientation	.789	.195	.199	4.053	.000
Anxiousness in English Learning	.694	.195	.176	3.566	.000
Language Aptitude	.319	.195	.081	1.637	.102
Personality Traits	-4.788E-02	.195	–.012	–.246	.806
Constant	18.433	.194			

Dependent Variable: Metacognitive Strategy Use

Multiple R	.562
R Square	.316
Adjusted R Square	.309
Standard Error	4.620

Analysis of Variance

	df	Sum of Squares	Mean Square
Regression	4	3756.996	939.249
Residual	381	8117.864	21.307
Total	385	11874.860	

F = 44.082 Significance *F* = .000

Coefficients

Predictor Variables	*B*	*Std. Error B*	*Beta*	*t*	*Significance t*
Attitude and Learning Orientation	2.213	.235	.399	9.409	.000
Anxiousness in English Learning	2.204	.235	.397	9.370	.000
Personality Traits	2.062E-02	.235	.004	.088	.930
Language Aptitude	-1.802E-03	.235	.000	–.008	.994
Constant	34.342	.235			

Dependent Variable: Affective Strategy Use

Multiple R	.328
R Square	.107
Adjusted R Square	.098
Standard Error	3.53

Analysis of Variance

	df	Sum of Squares	Mean Square
Regression	4	570.298	142.575
Residual	381	4741.725	12.445
Total	385	5312.023	

F = 11.456 Significance *F* = .000

Coefficients

Predictor Variables	*B*	*Std. Error B*	*Beta*	*t*	*Significance t*
Attitude and Learning Orientation	1.155	.180	.311	6.426	.000
Anxiousness in English Learning	.301	.180	.081	1.676	.094
Personality Traits	-.236	.180	-.063	-1.311	.191
Language Aptitude	-3.712E-03	.180	-.001	-.021	.984
Constant	19.630	.180			

Dependent Variable: Social Strategy Use

Multiple R	.477
R Square	.228
Adjusted R Square	.219
Standard Error	3.29

Analysis of Variance

	df	Sum of Squares	Mean Square
Regression	4	1211.455	302.864
Residual	381	4113.522	10.797
Total	385	5324.977	

F = 28.052 Significance *F* = .000

Coefficients

Predictor Variables	*B*	*Std. Error B*	*Beta*	*t*	*Significance t*
Attitude and Learning Orientation	1.371	.167	.369	8.184	.000
Anxiousness in English Learning	1.093	.167	.294	6.528	.000
Language Aptitude	–.269	.167	–.072	–1.606	.109
Personality Traits	2.432E-02	.167	.007	.145	.885
Constant	21.008	.167			

Dependent Variable: Overall Strategy Use

Multiple R	.599
R Square	.359
Adjusted R Square	.352
Standard Error	18.130

Analysis of Variance

	df	Sum of Squares	Mean Square
Regression	4	70021.277	17505.319
Residual	381	125211.720	328.640
Total	385	195233.000	

F = 53.266 Significance *F* = .000

Coefficients

Predictor Variables	*B*	*Std. Error B*	*Beta*	*t*	*Significance t*
Anxiousness in English Learning	9.701	.924	.431	10.500	.000
Attitude and Learning Orientation	9.368	.924	.416	10.140	.000
Language Aptitude	8.414E-02	.924	.004	.091	.927
Personality Traits	4.885E-03	.924	.000	.005	.996
Constant	166.997	.923			

Appendix 4

Attitudes/Motivation Test Battery

ATTITUDE TOWARD NATIVE SPEAKERS OF ENGLISH

Positively keyed

4. Most native speakers of English are friendly and easy to get along with.
15. The more I get to know native speakers of English, the more I want to be fluent in their language.
58. Native speakers of English are sociable, warm-hearted and creative people.
70. I would like to know more native speakers of English.

Negatively keyed

10. Fervour of native speakers of English is the real threat to our national unity.
19. The more I learn about native speakers of English, the less I like them.
36. By promoting English teaching to Indonesian students, in the long run we will loose our own national identity.
68. Indonesians should try to protect our culture from any influences of the cultural elements of native speakers of English, no matter how appropriate they might be.

ATTITUDE TOWARD LEARNING ENGLISH

Positively keyed

13. I really enjoy learning English.
26. Because English is an international language, I think that all Indonesian students should learn it so that they can communicate in it.
34. English is really great.
49. I love learning English.
64. I plan to learn as much English as possible.

Negatively keyed

11. When I finish my English study, I will give up studying it because I find I am not interested in it.
18. I hate English.
21. Learning English is a waste of time.
41. I find studying English very boring.
55. I would rather spend my time on subjects other than English.

DESIRE TO LEARN ENGLISH

Positively keyed

24. I wish I were fluent in English.
40. If it were up to me, I would spend all of my time learning English.
42. I would like to learn as much English as possible.
45. I want to learn English so well that it will become second nature to me.
57. I wish I had begun learning English at an early age.

Negatively keyed

2. I find I am loosing any desire I have ever had to know English.
12. To be honest, I really have little desire to learn English.
28. I do not have any great wish to learn more than the basics of English.
54. I sometimes daydream about dropping English.
71. Knowing English is not really an important goal in my life.

ENGLISH CLASS ANXIETY

Positively keyed

3. I feel confident when asked to participate in English classes.
16. Students who claim they get nervous in English classes are just making excuses.
23. I do not usually get anxious when I have to respond to a question in my English classes.
56. I do not understand why other students feel nervous about using English in class.
66. I do not get anxious when I am asked for information in my English classes.

Negatively keyed

6. It embarrasses me to volunteer answers in my English classes.
29. I get nervous and confused when I am speaking in my English classes.
31. I never feel quite sure of myself when I am speaking in my English classes.
60. It does not worry me that other students in my class seem to speak English better than I do.
76. I am sometimes afraid that the other students will laugh at me when I speak English.

ENGLISH USE ANXIETY

Positively keyed

20. I would feel quite relaxed if I have to ask street directions in English.
27. It does not bother me at all to speak English.
51 When called upon to use my English, I feel very much at ease.
72. I would feel comfortable speaking English in an informal gathering where both English as Indonesian speaking persons were present.
75. I would feel calm and sure of myself if I had to order a meal in English.

Negatively keyed

35. I would get nervous if I had to speak English to someone in a store.
38. I would feel uncomfortable speaking English under any circumstances.
44. I feel anxious if someone asks me something in English.
61. It would bother me if I had to speak English on the telephone.
67. Speaking English bothers me.

INTEREST IN FOREIGN LANGUAGES

Positively keyed

7. I would really like to learn many foreign languages.
22. If I stayed in another country, I would make a great effort to learn the language even though I could get along with English.
39. I wish I could speak another language (other than Indonesian) perfectly.
63. I often wish I could read newspapers and magazines in another language.
69. I enjoy meeting and listening to people who speak other languages.

Negatively keyed

1. Studying a foreign language is not a pleasant experience.
17. I really have no interest in foreign languages.
37. I would rather see a foreign language film dubbed into Indonesian than see the film in its original language with Indonesian sub-titles.
53. Most foreign languages sound crude and harsh.
74. Because being able to speak Indonesian alone is enough to socially survive, it is not important for Indonesians to learn a foreign language.

INSTRUMENTAL ORIENTATION

Positively keyed

9. Studying English is important because it will make me appear more cultured.

30. Studying English is important because it will give me an edge in competing with others.
47. Studying English can be important to me because I think it will some day be useful in getting a good job.
73. Studying English is important for me because it will increase my ability to influence others.

INTEGRATIVE ORIENTATION

Positively keyed

25. Studying English is important because it will allow me to get good friends among native speakers of English more easily.
32. Studying English can be important for me because it will allow me to meet and converse with more varied people.
50. Studying English is important because it may some day allow me to participate in the activities of native speakers of English.
65. Studying English is important because it will enable me to better understand the life and culture of native speakers of English.

MOTIVATIONAL INTENSITY

Positively keyed

5. I really work hard to learn English.
43. I keep up to date with English by working on it every day.
46. When I am studying English, I ignore distractions and stick to the job at hand.
52. When I have problems understanding something I am learning in my English classes, I always ask the lecturer for help.
62. I make a point of trying to understand all of English words that I see or hear.

Negatively keyed

8. I have a tendency to give up when my English lecturers go off on a tangent.
14. I do not bother checking my corrected assignments in my English courses.
33. I tend to approach my English homework in a random and unplanned manner.
48. I do not pay too much attention to the feedback I receive in my English classes.
59. I can not be bothered trying to understand the more complex aspects of English.