The Learning Styles and Language Learning Strategies of the EFL Students at Tertiary Level

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Abstract: The purposes of this study are to discover the learning styles, and the language learning strategies most preferred, correlation among the variables exists, and the degree of influence each independent variable exerts on the dependent variables. For data collection, the Barsch Learning Styles Inventory and the Strategy Inventory of Language Learning were distributed to 156 students of English at the University of Sriwijaya, Palembang. The results showed that: (1) visual is the most preferred learning style, whereas metacognitive and affective are the most preferred language learning strategies; (2) certain independent variables have a significant correlation with certain dependent variables, for example, visual with memory, auditory with cognitive, tactile with affective, and semester with compensation; (3) females use a greater variety of language learning strategies than males; and (4) semester has a significant correlation with compensation but not with other strategies.

Key words: learning styles, gender, semester, language learning strategies.

In Indonesia, especially in Palembang, the opportunity to use English with native speakers is rarely available to students. This seems to be

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the main factor which makes English difficult to learn. However, according to Chamot (1987:71), difficulties in learning English are not only true for EFL students, but also for those who learn English as a second language. Now, if this is the case, there must be factors besides the lack of a native speaker that cause a problem in learning English.

As teachers of EFL in Indonesia, we realize that there are many external factors that commonly cause EFL students to fail in learning English. Among these are big classes, geographical location of the schools, supplementary textbook availability especially in the library, access to a language laboratory, and teachers' qualifications (See also Dardjowidjojo, 1995). Each of these conditions is related to the others, and has made the problem of successfully teaching English even more complicated for an individual EFL teacher to solve.

Personal characteristics, such as motivation and language background, also influence students' success in EFL learning. Two relatively newly exposed personal factors, general learning styles and language learning strategies, need to be considered when analyzing why English seems difficult to learn.

Studies dealing with learning styles began in the mid-seventies, while studies considering the language learning strategies commenced in the late eighties. Since then, many studies have been conducted. For example, after research Naiman, et al. (1978) stated that 'many factors must be considered simultaneously to discover how they interact to affect one's success as a language learner in a given situation.' Based on their study with EFL high school students, Naiman et al. claimed that students' success is influenced by a number of personality and cognitive traits.

Then in 1987, based on some of the limitations of the previous study, Abraham and Vann conducted a case study on successful versus unsuccessful language learners. Subjects were selected from among fifteen students in an intensive ESL course. The students' TOEFL score was used as the criterion to assess whether the student was a successful learner. In this study Abraham and Vann tried to discover the relationship between learner backgrounds and learner strategies. They concluded that (1) both successful and unsuccessful subjects employed similar strategies to create opportunities to use English; (2) in terms of grammatical correctness, some subjects paid a lot of attention to forms while the others did not; and (3) those who did focus on grammar usually used a greater variety of strategies than the student who did not.

In relation to those studies, Entwistle (1992) concluded that studying can be described in terms of three components: (1) characteristics of successful students; (2) concepts from cognitive psychology; and (3) concepts from research on student learning.

Furthermore, Oxford (1989; 1994) maintained that some personal factors influence ESL students' choice of learning strategies. These include: motivation, sex, cultural background, nature of the task, age, and stage of language learning. She added that the students' general approach to language learning also greatly determines the choice of language learning strategies.

In 1995, Green collaborated with Oxford to conduct research on the relationship of language learning strategies to L2 proficiency and gender using students in three different course levels at the University of Puerto Rico. They found that (1) there was a significant difference in the use of learning strategies at each of the proficiency levels, (2) female students showed greater strategy use than male students, though there was no significant correlation between proficiency and gender, (3) there is a significant correlation between each of the six SILL categories and proficiency, gender, or both, (4) females use memory, metacognitive, affective, and social strategies significantly more often than males, (5) 22 of the 55 SILL items varied significantly by course level, and (6) there was a substantial relationship between strategy use and success in language learning.In addition, Green and Oxford (1995) also reported that studies conducted in different geographical and cultural settings revealed that students who are better in language performance usually tend to use a variety of strategies at a high frequency. Furthermore, Oxford (1990) and Rigney (1978) confirmed that student specific language learning strategies can help the development of language competence.

Finally, Davis et al. (1994) researched ways of helping teachers and students of English understand learning styles at Hasanuddin University in Indonesia. They confirmed that although every learner has his/her own individual learning style, 66% of the students are predominantly visual learners. Therefore, they suggested that teachers take learning styles into account in order to make the teaching and learning process more productive and efficient.

Having been inspired by the above studies, the present study was aimed as follows:

1. to identify the variety of learning styles and language learning strategies used by EFL students at Sriwijaya University;
2. to discover which of the learning styles and which of the language learning strategies is most preferred;
3. to find out whether there is a significant correlation between the students' learning styles and their language learning strategies; and if there is, which category of their language learning strategies is most influenced by learning styles;
4. to see whether gender and/or length of study also significantly influences each category of the language learning strategies in addition to each of the learning styles. If they do, how much the variation is explained by each of the independent variables; and
5. to relate the findings of this study to future practices in the classroom.

METHODS

The subjects of the study were 156 students of English at the English Study Program, Language and Arts Education Department, School of Teacher Training and Education, Sriwijaya University, Indonesia. Students were in the first semester, third semester, fifth semester, seventh semester, and ninth semester. Out of 156 students, 121 were females and 35 were males.

Two types of questionnaires, Barsch Learning-Styles Inventory or BLSI (Barsch, 1974) and Strategy Inventory for Language Learning or SILL (Oxford, 1989), were used to collect the data for this study. While the BLSI was used to identify which of the three learning styles, visual preference (VP) is preferred by the subjects (visual preference (VP), auditory preference (AP), or tactile preference (TP)), the SILL was applied to identify which of the six language learning strategies, remembering more effectively (memory), using all mental processes (cognitive), compensating for missing knowledge (compensation), organizing and evaluating learning (metacognitive), managing emotions (affective), and learning with others (social) is used. Two sets of the questionnaires were given to the students during the first week in November, 1995. The data obtained were analyzed using the SPSS program. To see whether there was a correlation between the independent variables and dependent variables and the degree of influence of the independent variables upon

the dependent variables, Multiple-Regression Analysis statistics were used.

RESULTS

The results of the scoring analysis is, that of the three learning styles, visual is the most preferred, followed by auditory and tactile with average scores of 21.4, 20.2, and 15.3 respectively. Of the language learning strategies, the study revealed that metacognitive and affective are the most salient strategies used by students with an average score of 3.7, followed by cognitive and compensation with an average score of 3.5, then by social with an average score of 3.3, and finally by memory with an average score of 3.2 (See Table 1)

Table 1 Average Scores of Learning Styles and Language Learning Strategies Used by the Students (N = 156)

Learning Styles			Language Learning Strategies					
VP	AP	TP	Memory	Cognitive	Compensation	Meta-Cognitive	Affective	Social
21.4	20.2	15.3	3.2	3.5	3.5	3.7	3.7	3.3

By using zero order correlation coefficient analysis, we discovered that certain learning styles, gender, and semester had a positive, significant correlation with certain language learning strategies. For example, (1) the visual learning style was highly and significantly related with the metacognitive, affective, memory, and social language learning strategies; (2) the auditory learning style was significantly correlated with the memory, metacognitive, affective, and cognitive language learning strategies; (3) the tactile learning style was highly and significantly correlated with the affective aspect of language learning; (4) gender was highly and significantly correlated with the memory strategy; and (5) semester was highly and significantly correlated with the affective strategy and with compensation, though the latter not as highly correlated as the former (See Table 2).

Table 2 Pearson Product-Moment Correlation Coefficients among Variables Measured (N = 156)

Independent Variables / Dependent variables	VP	AP	TP	Gender	Semester
Memory	.25****	.15****	-----	.17****	-----
Cognitive	-----	.24**	-----	-----	-----
Compensation	-----	-----	-----	-----	.17*
Metacognitive	.22*****	.26****	-----	-----	-----
Affective	.28*****	.16****	.29****	-----	.17*****
Social	.20**	-----	-----	-----	-----

Notes: ***** $p < .0001$ **** $p < .001$ *** $p < .002$
** $p < .01$ * $p < .05$

In order to determine whether the combination of the learning styles as a whole explained the variation in each category of the language learning strategies, Multiple-Regression Analysis was used. The results showed that learning styles as a whole influenced memory by 9%, cognitive by 7%, metacognitive by 13%, affective by 16%, social by 5%, and compensation by 2% (the contribution of the last two are not significant). (See Table 3)

Table 3 Summary Statistics of the Learning Styles on Each of the Language Learning Strategies (N = 156)

Dependent Variables	Independent Variables	BETA Weight	R	R2	df	F
Memory	Visual	.24248**	.30175	.09105	3	5.07539***
	Auditory	.16369*				
	Tactile	.05454				
Cognitive	Visual	.14383	.27317	.07462	3	4.08563**
	Auditory	.24396**				
	Tactile	-.02159				

Dependent Variables	Independent Variables	BETA Weight	R	R2	df	F
Compensation	Visual	.12505	.15874	.02520	3	1.30974
	Auditory	.07952				
	Tactile	.04096				
Metacognitive	Visual	.25343***	.35575	.12656	3	7.34145*****
	Auditory	.16369*				
	Tactile	-.05454				
Affective	Visual	.22420**	.39482	.15588	3	9.35649*****
	Auditory	.16910*				
	Tactile	.23114**				
Social	Visual	.20929**	.21341	.04554	3	2.41765
	Auditory	.16369*				
	Tactile	.05454				

Notes: ***** $p < .0001$
**** $p < .001$
*** $p < .002$
** $p < .01$
* $p < .05$

Furthermore, in order to see how much influence each of the independent variables or combinations of independent variables exerts upon the dependent variables, statistical analysis using Stepwise Multiple Regression was then performed. The results of this analysis (See Table 4) showed that (1) memory was 12% influenced by the combination of visual, gender, and auditory and with each it showed a significant correlation; (2) cognitive was 5% influenced only by auditory; (3) compensation was 2% influenced only by semester (length of study); (4) metacognitive was 14% influenced by the combination of auditory, visual, and gender and showed a significant correlation with each of these; (5) affective was 19% influenced by tactile, visual, semester, and auditory which with each of these variables had its own correlation except with auditory; and (6) social was 4% influenced by visual.

Table 4 Summary Statistics of the Learning Styles, Gender, and Semester on Language Learning Strategies (N = 156)

Dependent Variables	Independent Variables (Predictor)	BETA Weight	R	R2	df	F
Memory	Visual Preference	.24727****	.24727	.06114	1	10.02914****
	Visual Preference	.25570****	.30765	.09465	2	7.99727****
	Gender	.18325**				
	Visual Preference	.26642****	.35169	.12368	3	7.15109****
	Gender	.18842**				
	Auditory Preference	.17079*				
Cognitive	Auditory Preference	.23494**	.23494	.05520	1	8.99708**
Compensation	Semester	.16854*	.16854	.02841	1	4.50251*
Metacognitive	Auditory Preference	.25900****	.25900	.06708	1	11.07345****
	Auditory Preference	.27333****	.34842	.12139	2	10.56965*****
	Visual Preference	.23349****				
	Auditory Preference	.27802****	.38105	.14520	3	8.60621*****
	Visual Preference	.24088****				
	Gender	.15452*				
Affective	Tactile Preference	.29225****	.29225	.08541	1	14.38109****
	Tactile Preference	.23574**	.35695	.12741	2	11.17035*****
	Visual Preference	.21260**				
	Tactile Preference	.25749****	.40761	.16615	3	10.09540*****
	Visual Preference	.20745**				
	Semester	.19792**				

Dependent Variables	Independent Variables (Predictor)	BETA Weight	R	R2	df	F
	Tactile Preference	.25232****	.43787	.19173	4	8.95457*****
	Visual Preference	.21865**				
	Semester	.190600**				
	Auditory Preference	.16047				
Social	Visual Preference	.20184**	.20184	.04074	1	6.54011**

Notes: ***** p < .0001 **** p < .001 *** p < .002
** p < .01 * p < .05

Since we found that gender had a significant correlation with memory (See again Table 2) we were encouraged to discover whether there was a significant difference between males and females in terms of their learning styles and semester (length of study) and their language learning strategies. Regression Analysis demonstrated that only two male language learning strategies were influenced by independent variables. First, the combination of semester and visual explained 25% of the negative influence on memory with semester alone explaining 14% of the variation. Second, visual accounted for 12 % of the influence on the affective aspect (See Table 5a).

Table 5a Summary Statistics of the Learning Styles, Gender, and Semester on Language Learning Strategies (N = 156)

Dependent Variables	Independent Variables	BETA Weight	R	R2	df	F
Memory	Semester	-.36854*	.36854	.13582	1	5.18654*
	Semester	-.38458**	.49716	.24716	2	5.25297**
	Visual Preference	.26642****	.35169	.12368	3	7.15109****
Affective	Visual Preference	.34055*	.34055	.11597	1	4.32922*

Notes: ** p < .01 * p < .05

For females, we found that, though not on a one-to-one basis, all independent variables had a significant share in explaining all six categories of the language learning strategies (See Table 5b). First, memory was 10% influenced by visual, while auditory was 6% influenced by the same style; second, cognitive was 6% influenced by auditory; third, compensation was 4% affected by semester; fourth, metacognitive was 13% influenced by auditory and visual, with auditory alone accounting for 8%; fifth, the affective aspect was 26% influenced by all of the four independent variables (visual, tactile, semester, auditory), in which each shared significant influence; and last, social was 4% affected by visual.

Table 5b Summary Statistics of the Learning Styles, Gender, and Semester on Language Learning Strategies (N = 156)

Dependent Variables	Independent Variables	BETA Weight	R	R2	df	F
Memory	Visual Preference	.24041**	.24041	.05780	1	7.29963**
	Visual Preference	.26371**	.32098	.10303	2	6.77689****
	Auditory Preference	.21371**				
Cognitive	Auditory Preference	.25385**	.25385	.06444	1	8.19645**
Compensation	Semester	.18776*	.18776	.03525	1	4.34851*
Metacognitive	Auditory Preference	.28987****	.28987****	.08402	1	10.91606****
	Auditory Preference	.31159****	.36388	.13241	2	9.00441*****
	Visual Preference	.22140**				
Affective	Visual Preference	.34235*****	.34235	.11720	1	15.79861*****
	Visual Preference	.27798****	.41061	.16860	2	11.96500*****
	Tactile Preference	.23568***				
	Visual Preference	.27474****	.47157	.22238	3	11.15307****
	Tactile Preference	.26074**				
	Semester	.23317**				

Dependent Variables	Independent Variables	BETA Weight	R	R2	df	F
	Visual Preference	.29754****	.51113	.26125	4	10.25570*****
	Tactile Preference	.24804**				
	Semester	.21998**				
	Auditory Preference	.19886**				
Social	Visual Preference	.20982*	.20982	.04403	1	5.48037*

Notes: ***** $p < .0001$ **** $p < .001$ *** $p < .002$
** $p < .01$ * $p < .05$

DISCUSSIONS

In learning English, the visual learning style and metacognitive and affective language learning strategies are preferred and most often used by students. This means that learning processes are more likely to be influenced by visual rather than by auditory and tactile styles (This finding supports the previous study by Davis et al. in 1994) and by metacognitive and affective strategies rather than by other strategies. This implies that while students read, they try to organize and evaluate their learning and manage their emotions. Opportunities to speak English with native speakers are very rare which forces students to employ reading as their most common learning technique. Since reading is usually an isolated activity, students do not consider learning with others to be very beneficial. This may be why the social strategy is the second least used language learning strategy and why the visual style is the most preferred.

Learning styles, gender, and semester correlate with language learning strategies, but not on a one-to-one basis. No students use all of the learning styles or language learning strategies, but instead make choices to suit their own needs.

Of the three learning styles, visual preference contributes to better memorization, which confirms Whiteside's (1982:19) claim that visual aids attract our attention to the words being spoken. This implies that

the use of visual aids such as videos, films, transparencies, and slides, can greatly enhance the effectiveness of student memorization, and should be used as much as possible.

The use of the cognitive and metacognitive language learning strategies are more influenced by auditory preference than by visual preference, tactile preference, or gender. The reason for this might be that people can use all mental processes, organize, and evaluate after merely hearing information. Vision and touch are not always essential in the learning process.

The length of study, or semester, only influences the compensation language learning strategy. This finding partially supports the results of a previous study (Green and Oxford, 1995) in which higher level students were found to be more keen to compensate for missing knowledge. This implies that the better one's language competence, the better one can compensate in communication. For example, should a communication breakdown occur, code switching, guessing intelligently or using gestures can be employed if one has a greater understanding of the language.

Several conclusions can be drawn about dissimilarities between the learning processes of males and females.

(a) Semester negatively influences male students' memory strategy, but positively affects female students' use of the compensation strategy. This means that the longer males study, the less effectively they use the memory strategy to learn English, while the longer females study, the better they can cope in an English speaking situation.
(b) Visual preference is only influential on males' memory and affective learning strategies, but for females it also affects the metacognitive and social learning strategies. This implies that females are more motivated by vision and are more creative in their use of learning strategies.
(c) Although only visual preference positively affects male language learning strategies, for female students, auditory preference, tactile preference, and semester also contribute to the use of language learning strategies. This indicates that female students use a greater variety of learning strategies than do male students, which supports a previous study in a divergent geographical area which was conducted by Green and Oxford in 1995.

CONCLUSIONS AND SUGGESTIONS

Conclusions

The conclusions of this study point to several societal implications about gender and learning.

Because society caters to men, women must develop coping and learning strategies in order to feel more comfortable and secure in many situations, including the academic environment Hence the results of our study indicate that females commonly use 4 learning strategies while males only use 1.

Female students are generally less encouraged to participate in the classroom and so must devise and employ learning strategies for use both inside and outside the classroom to compensate for this inequality. For example, male students are more encouraged to speak and participate in class (auditory learning), causing females to rely on written texts or notes (visual learning) more than males do.

Socially, women network more than do men, which is reflected in females' preference for the social learning strategy. Women are less restricted emotionally and therefore are more in touch with their emotions than are men, which accounts for their use of the affective learning strategy.

Women are more keen to employ the compensation strategy throughout their school years because, due to the fact that they are less encouraged to participate orally in the classroom, they must individually compensate for questions they develop (missing knowledge) while studying.

Suggestions for Applications

The following applications of the study are relevant for EFL classrooms, especially those at the tertiary level.

1. Active use of English and various language learning strategies should be emphasized to EFL students.
2. Students should be made aware of the various learning strategies and options available to them.
3. It is imperative for teachers to recognize and provide for all three types of learning styles and all six types of language learning strategies.

4. Visual aids such as videos, films, transparencies, and slides should be available in language classrooms and their use should be encouraged.
5. The compensation and social learning strategies should be developed with classroom activities which encourage interactions.
6. Learning activities that require the use of vision, such as following written directions, taking notes, using diagrams, charts and maps, and reading for information should be a regular part of all EFL lessons.

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