Do Conceptions of Learning Predict Language Learning Strategies? Evidence from Indonesian EFL Learners

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Abstract

Research has shown that information on students' conceptions of learning (COL) and their language learning strategies (LLS) are beneficial for understanding certain recurring phenomena of foreign language learning and outcomes. However, these two constructs have been separately studied from each other. This study sought to fill this void by investigating the relationship between the constructs and the extent to which COL predicts LLS. Data were collected by administering the Conceptions of Learning Inventory (COLI) and Strategy Inventory for Language Learning (SILL) to 210 pre-service EFL teachers at an English department of a state higher education institution in Indonesia. Data were analyzed using the nonparametric *Spearma's-Rho* test and *Regression Tree* (RT) analysis technique. The results show statistically significant positive correlations between the two constructs. Further analyses show that COL, to some extent, predicted LLS.

Keywords
Conceptions of learning, EFL, language learning strategies, regression tree

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Introduction

Studies on Conceptions of Learning (COL) in different contexts repeatedly showed significant effects the construct had on teaching and learning processes. Studies on teachers, for example, showed that COL influences their teaching behaviors (Martin, Pozo, Mateos, Martin, & Echeveria, 2014) in terms of teacher centeredness and orientation to professional practice (Jacobs, Wilschut, van der Vleuten, Scheele, Croiset, & Kusurkar, 2020), teacher efficacy beliefs (Bahcivan & Kapucu, 2014), technology acceptance (Teo & Zhou, 2016) and teachers' choices of teaching strategies (Donche & van Petegem, 2016). Studies on students' COL showed that the construct contributed to, among others, students' academic achievements (Peterson, Brown, & Irving, 2010; Alamdarloo, Moradi , & Dehshiri, 2012; Lonka, Ketonen & Vermunt, 2021;),the quality of learning outcomes (Chaleta, Gracio & Ramalho, 2012); learning motivation (Negovan, Sterian, & Colesniuc, 2015), and study habits (Heidarzadeh, Tirgari, Azizzadeh, Forouzi, Shafiean, Vadiati, & Saeid, 2020).

Furthermore, the relationships between students' COL and their learning strategies in different levels of education and subjects have also been identified. COL was found to be related to, among others; Taiwanesse high school students' strategies in learning biology (Shen, Li, & Lee, 2018; Sadi, 2017), Italian upper secondary school students' learning strategies (Vettori, Vezzani, Bigozzi, & Pinto, 2020), Chinese secondary school students' strategies in learning science (Li, Zheng, Liang, Zhang, & Tsai, 2018), Iranian university students' strategies in virtual and real space learning (Abbasi, Pourshahriar, & Fathabadi, 2017). All these studies suggest strong associations between COL and learning strategies.

Similarly, studies on Language Learning Strategies (LLS) also suggested a strong association between the construct with language learners' achievements and other related variables. LLS, for example, was found to be associated with EFL learners' proficiency (Magno, 2010; Gerami & Baighlou, 2011; Tragant & Victory, 2012; Irgatoglu, 2021), self-efficacy (Montaño-González, & Cancino, 2020), extraversion and introversion (Taheri, Sadighi, Bagheri, & Bavali, 2020), language learning motivation (Ranjan & Philominraj, 2020), academic self-concept (Biyikl, 2021), personality traits (Obralic & Mulalic, 2017). In addition, researchers also found that EFL learners' LLS specifically predicted their mastery of the four language skills, i.e. listening (Goh & Vandergrift; 2021; Caskun, 2010), reading (Puspita, 2016; Ghafournia, 2014; Nasab & Motlagh, 2015, Nazurty et al., 2019), speaking (Septikawati, Kristina, Nurkamto, 2019; Cabaysa & Baetiong, 2010) and writing (Pitenoee, Modaberi, & Ardestani 2017; Sabria, 2016; Chand, 2014).

However, although research findings suggested the significant effects of COL and LLS on various aspects of language learning and the associations between students' COL and learning strategies in general, to date, research that explores the relationship between EFL learners' COL and their LLS is still absent. In light of the absence, the current study seeks to fill the void by exploring the issue. The results of the study are important for a better understanding of language learning phenomena in general, and of EFL learning in particular. Specifically, the this study seeks to answer the following research questions:(1) Do

Indonesian EFL learners' conceptions of learning (COL) correlate with their language learning strategies (LLS)?; and (2) Do Indonesian EFL learners' conceptions of learning (COL) predict   their language learning strategies (LLS)?

Literature Review

The current study sought to explore the causal relationship between two constructs, i.e. conceptions of learning and language learning strategies. In accordance with this focus, this section discusses theories that underpin the constructs explored in this study.

Conceptions of learning

Research of conceptions of learning was pioneered by Saljo (1979) who studied the learning experience and techniques of Swedish students'. The participants of the study were asked to define what learning meant to them. The findings showed that the participants perceived learning in five different concepts, i.e. (1) an increase in knowledge; (2) memorizing; (3) an acquisition of facts or principles, which can be retained and used in practice; (4) an abstraction of meaning; and (5) an interpretive process aimed at understanding reality. The study further distinguished the conceptions into two categories, i.e. surface- level and deep-level processing. The concepts of learning as memorizing and as an acquisition of facts or principles, which can be retained and used in practice, were categorized as surface-level processing as they perceive new knowledge as a complete externality to be passively incorporated into one's knowledge repertoires. While, the concepts of learning as   an abstraction of meaning and as an interpretive process aimed at understanding reality were categorized as deep-level processing as they perceive new knowledge needs to be actively related to one's existing knowledge and previous experiences in order to understand its meaning (Saljo,1979).

Later on, following Saljo's (1979) suggestions that "... learning does not exist as a general phenomenon. To learn is to act within man-made institutions and to adapt to the particular definitions of learning that are valid in the educational environment in which one finds oneself" (p. 106) and that "the meaning of the concept of learning is highly ambiguous and not susceptible to any analytically satisfactory definition" (p. 104), researchers had studied conceptions of learning of students from different cultural background. Research by Marton, Dall'Alba, and Tse (1993), for example, found both identical and different understanding of learning among Chinese teacher educators when compared to Western concepts of learning. The study showed that, contrary the Western concepts that distinguish memorization from understanding; the Chinese teacher educators saw that memorization was a mutual part of the process of understanding. Different concepts were also reported from research on Nepalese students (Watkins & Regmi, 1992; Watkins, Regmi, & Astilla, 1991). The research showed that the students did not associate learning with memorization.

To further explore research findings on cross-cultural conceptions of learning, Purdie, Hattie, and Douglas (1996), conducted a qualitative research on conceptions of learning of Japanese and Australian students. The study identified nine conceptions of learning. Learning was perceived as: (1) increasing one's knowledge; (2) memorizing and

reproducing information; (3) using information as a means to an end; (4) understanding; (5) seeing something in a different way; (6) personal fulfillment; (7) a duty; (8) a process not bound by time or context; and (9) developing social competence. Based these findings Purdie and Hattie (2002) constructed a 112 item inventory that measure the nine conceptions of learning. The first administration of the inventory resulted in 45 items. While the second administration left 32 items that measure six conceptions of learning: (1) gaining information; (2) remembering, using, and understanding information; (3) duty; (4) personal change; (5) process not bound by time or place, and (5) the development of social competence.

In order to check the validity, reliability, and the cross-cultural robustness of the inventory, Purdie and Hattie (2002) administered the inventory to 1694 students from five different ethnic backgrounds, i.e. Non-Aboriginal Australian, Aboriginal Australian, Malaysian, Caucasian American, and African American. Assessment of fit statistics showed that inventory, which is called Conceptions of Learning Inventory (COLI), could measure the construct well across the different cultural groups of student, with an exception for the Australian Aboriginal group due to high interscale correlation. In addition, the researchers reported that across groups internal consistency reliability indexes ranged from .45 to .92, with a mean of .74 and a median of .76 (Purdie & Hattie, 2002). Ever since, a great number studies that used COLI across different contexts and students' cultural backgrounds (e.g., Mulyani, Suherdi, & Sundayana, 2020; Pinto, Bigozzi, Vettori, & Vezzani, 2018; Chaleta, 2018; Chan, 2011; Peterson, Brown, & Irving; 2010) reported satisfactory psychometric properties of the inventory. The present used the Conceptions of Learning Inventory (COLI).

Language learning strategies

Theories and research on LLS started to develop in the early 1970s. Two of the earliest definitions of LLS are "the techniques or devices which a learner may use to acquire knowledge" (Rubin, 1975, p 43) and "…optional means for exploiting available information to improve competence in a second language" (Bialystok, 1978, p. 71). Later, Oxford (1990) defines language learning strategy as "Specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations" (p.8). The present study refers to the last definition and used an inventory developed based on it. Scholars have proposed different classifications of LLS. Bialystok (1978) suggested a four- category classification based on the types of practices and information processing in language learning: (1) formal practicing, i.e. learning a language by practicing language rules; (2) functional practicing, i.e. learning a language by using it for communication purposes; (3) monitoring strategies, i.e. learning a language through modification, examination, and correction of linguistic outputs; and (4) inferencing Strategies, i.e. learning a language by guessing of unknown inputs or forms. Fillmore (1979) proposed two categories of LLS, i.e., cognitive strategies and social strategies. The former assumes that language learners actively identify patterns of the target language, while in the latter language learning is pursued through interacting with people. Rubin (1981) suggested

an LLS classification consisting of (1) Direct Strategies which is characterized by clarifying, memorizing, guessing, inductive inferencing, and deductive reasoning, and (2) Indirect Strategies which is characterized by use of linguistic performance competencies.

The most widely referred to classification of LLS has been Oxford's (1990), which is also the classification used in the present study. The classification draws on six strategies, i.e.(1) Memory Strategies which include creating mental linkages, applying images and sounds, reviewing, and taking actions or responding to the target language; (2) Cognitive Strategies which include practicing, receiving and sending, analyzing and reasoning, and creating structure for target language inputs and outputs; (3) Compensation Strategies which include the use of intelligent guessing and finding ways to overcome barriers in speaking and writing ; (4) Metacognitive Strategies which deals with self-coordinating of learning process such as focusing, arranging, planning and evaluating learning; (5) Affective Strategies which focus on managing psychological issues such as anxiety, motivation, and emotion; and (6) Social Strategies which focus on collaborative learning. Furthermore, Oxford (1990) classifies the six strategies into two types, i.e. *Direct Strategies* and *Indirect Strategies*. Direct Strategies are subconscious, inherently learned and related directly to the target language. This type of strategy includes Memory Strategies, Cognitive Strategies, and Compensatory Strategies. Indirect Strategies operate under the learner's conscious control or acts and focus on organizing the overall language learning process. These include Metacognitive Strategy, Affective Strategies, and Social Strategies.

Based on her classification of LLS, Oxford (1990) constructed an inventory for measuring language learning strategies called Strategy Inventory for Language Learning (SILL). SILL comes in two versions; Version 5.1, which was designed for native English speakers learning, and Version 7.0 (henceforth, referred to as SILL in this report) which was designed for non-English speakers who are learning English. SILL consists of 50 items purported to measure the 6 categories of LLS proposed by Oxford (1990). Assessments of the psychometric properties the inventory in different EFL and ESL contexts (e.g., Nykos & Oxford, 1993; Oxford & Burry-Stock, 1995; Hsiao & Oxford, 2002) produced a very high reliability ($\alpha = 0.9$- 0.94).

Methodology

Research design, site, and participants

This study is quantitative and ex post facto in nature. It draws on the correlational strategy and seeks to: (1) determine whether or not there is a significant correlation among the participants' COL and LLS, and (2) determine the extent to which their COL as the independent variable or predictor predicts their LLS as the dependent variable. This study involved 210 pre-service EFL teachers who were, at the time of data collection, in their 1st, 3rd, 5th, and 7th semester at an English department of a state higher education institution in Indonesia. Students of higher semesters were not involved in the study as they were mostly unavailable on campus as most of them were in their thesis writing stage of their study completion. The demographic information of the participants is summarized in the following table:

Table 1. *Research participants' demography*

		n	%
	I	63	30
	III	56	26
Semester	V	50	24
	VII	41	20
	Total	210	100
	Male	54	26
Gender	Female	156	74
	Total	210	100

Data collection and analysis

Data were collected by administering the Indonesian version of Conceptions of Learning Inventory (Purdie & Hatie, 2002) and Strategy Inventory for Language Learning (Oxford, 1990) to the 210 participants through on-line survey forms. The COLI consists of 32 items that measure 6 conceptions of the construct (Table 2). For example, item 1, one of the items that measures conception of learning as gaining information, reads *"Learning is when I am taught something that I didn't know about before"*. The SILL consists of 50 items measuring 6 strategies (Table 2). The word "English" was added to the items for the focus of the study was on the learners' strategies in learning English. As an example, item 1, one of the items that measures memory strategies reads "*I think of relationships between what I already know and new things I learn in English*". In addition, considering the fact that the study was conducted in an EFL context where participants' interactions with native speakers of English hardly happen, two items of the SILL, i.e. item 46 and item 48, that contain statements on asking for native speakers' correction and assistance in English learning were considered irrelevant and, therefore, removed from the inventory. This left 48 items in the administered inventory for data collection.

Both inventories were assigned a five-category response for each of their items. For the Conceptions of Learning Inventory the responses were coded as 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree. Responses for the Strategy Inventory for Language Learning were coded as 1 = Never, 2 = Seldom, 3 = Sometimes, 4 = Often, and 5 = Always. The higher or the lower a respondent's agreement with an item was respectively interpreted to reflect the more or the lesser his or her association with the conception of learning or use of language learning strategy being measured by the item.

To ensure the accuracy of the Indonesian translation of the inventories, back-to-back translation procedures were conducted and the results were evaluated by two competent English lecturers of English. Both evaluators agreed on the accuracy and appropriateness of the translation to be used in the present study.

Table 2. *Dimensions and items of COLI and SILL*

Predictors	
Conceptions of Learning (COL)	**items**
Learning as gaining information (LCInfo)	1, 7,13,19,23
Learning as remembering, using, and understanding information (LCRUU)	2,8,14,20,25,26,28,30,32
Learning as a duty (LCDuty)	3,9,15
Learning as personal change (LCPers)	4,10,16,21,25,27,29,31
Learning as a process not bound by time or place (LCProc)	5,11,17
6. Learning as the development of social competence (LCSoc)	6,12,18,22
Dependent Variable	
Language Learning Strategies (LLS)	**Items**
1.Memory (LLSMem)	1,2,3,4,5,6,7,8,9
2.Cognitive (LLSCog)	10,11,12,13,14,15,16,17,18,19,20,21,22,23
3.Compensatory (LLSComp)	24,25,26,27,28,29
4.Metacognitive (LLSMeta)	30,31,32,33,34,35,36,37,38
5.Affective (LLSAfc)	39,40,41,42,43,44
6.Social (LLSSoc)	45, 47,49,50

Data analyses were conducted in four phases. First, the data obtained from the administration of the two inventories were analyzed for validity and reliability using *Rasch* analysis on *Winsteps Rasch Analysis* computer software (Linacre, 2006). Second, as the data resulting from the two instruments were non-linear and ordinal in nature, they were converted into interval ones using *Method of Interval* (MSI) and analyzed for descriptive statistics. At this point of analysis, assessments of data properties in terms of normality and homogeneity were conducted and a decision on the choice of using either parametric or non-parametric data analysis techniques for the next analyses was made. Third, in order to answer the first research question, the data were analyzed to determine the correlation between COL and LLS. The analysis was conducted using *Spearman's Rho* non-parametric technique as the results of analysis in phase two showed that the data were not normally distributed. Fourth, to determine the extent to which COL predicts LLS which is the second research question, *Regression Tree* (RT) analysis technique was used to suit the non-normally distributed data sets.

RT is a non-parametric regression technique that models causal interactions between a dependent variable and predictor variables. RT is built based on recursive partitioning of the data space into smaller portions that identify the most significant predictors of a dependent variable. The divisions proceed with information provided by each predictor on the cut-off score for the maximum partitioning of the data. RT analysis outputs are presented in a hierarchical binary tree consisting of nodes and edges. The edges that connect the nodes indicate the relative level of the nodes within the tree's hierarchical structure Each node presents the estimates of mean (M), standard deviation (SD), and number of observations associated with it (Blanch & Aluja, 2013). The second, the third, and the fourth phase of data analyses were conducted using IBM SPSS computer statistical analysis software Version 26.

Findings

Validity and reliability

To assess the validity of the instruments, examination of *Item Polarity* and *Item Fit Statistics* (Bond & Fox, 2013) which respectively indicated by *Point Measure Correlation (PTMEACORR)* and *Infit Mean Square (IMNSQ)* values of Winsteps Rasch analysis computer software outputs was conducted. The results showed that all the items of the two instruments had a positive value ranging from .15 to .55 for the COLI and .15 to .64 for the SILL. While for IMNSQ, with an acceptable fit statistics values between 0,5 to 1,5 (Linacre, 2006), two items of the COLI, i.e. item 3 and item 15 and two items of the SILL, i.e. item 26 and item 43 were found to have a value outside the range. However, as up to 5% of items may misfit by chance (Smith, 1991), the misfitting items were retained for the data analyses and the instruments were considered valid. As for reliability, the reliability indices of item difficulty estimate of .94 for the COLI and .98 for the SILL are considered very high. This indicates a high probability that similar order of item difficulty would be produced if the set of questionnaires is administered to other comparable samples.

Descriptive statistics

Assessment of descriptive statistics (Table.3) show that the means for LC range from 3.95 to 4.37, SD=.478 to .568. While the means for LLS range from 2.88 to 3.37, SD= .499 to .647. The skewness values for LC indicate that the data were not normally distributed, $p=<.001$ while the skewness values for LLS indicate that the data were normally distributed, $p=>.05$. As such, non-parametric techniques were used for the next data analyses.

Table 3. *Summary of predictors and dependent variables statistics*

COL	Mean	Mean Rank	SE	SD	Skewness	SE	p
LCInfo	4.12	4	0.0339	0.492	-0.8807	0.168	< .001
LCRUU	4.19	2	0.0330	0.478	-0.6998	0.168	< .001
LCPers	4.37	1	0.0334	0.484	-0.4940	0.168	< .001
LCDuty	3.95	6	0.0389	0.563	-0.2109	0.168	< .001
LCProc	3.98	5	0.0389	0.563	-0.7498	0.168	< .001
LCSoc	4.17	3	0.0392	0.568	-0.7066	0.168	< .001
LLSMem	3.37	2	0.0344	0.499	-0.2251	0.168	0.262
LLSCog	3.15	3	0.0366	0.531	-0.0385	0.168	0.701
LLSComp	3.02	5	0.0389	0.564	-0.1467	0.168	0.452
LLSMeta	3.71	1	0.0431	0.625	-0.2106	0.168	0.348
LLSAfc	2.88	6	0.0376	0.545	0.1443	0.168	0.198
LLSSoci	3.06	4	0.0446	0.647	-0.0193	0.168	0.080

Examination of the means for LC and LLS showed that the most held LC was LCPers, M=4, 37, SE=.0334, SD= .484, and the least held LC was LCDuty, M=3.95, SE=.0389, SD=.563. The most used LLS was LLSMeta, M=3.71, and the least used LLS was LLSAfc, M=2.88, SE=.0376, SD=.545. The complete order of the participants' LC and LSS are presented in the mean rank column of Table 3. However, *Kruskal-Wallis Test* showed that there was no significant difference among the means of both LC and LSS, $p= >.05$.

Correlations among the participants' conceptions of learning (COL) and their language learning strategies (LLS)

As examination of the two data sets showed that they were not normally distributed, the non-parametric technique of *Spearman's Rho* was used to explore the correlations among the participants' COL and LLS. The omnibus test showed a positive correlation between the two constructs, $r_s (208) = .20$, *p=.004*. Furthermore, computations of correlations among individual conceptions of learning and language learning strategies of the (Table 4) also yielded significant positive correlations between: (1) LCInfo and LLSComp, LLSMeta, and LLSSoc; (2) LCRUU and LLSCog ,LLSComp, and LLSSoc; (3) LCPers and LLSCog,LLSComp, LLSMeta, and LLSSoc (4) LCProc and LLSMem , LLSCog, and LLSMeta; and (5)LCSoc and LLSMem. However, no COL was found to correlate with LLSAfc and no LLS was found to correlate with LCDuty.

Table 4. *Correlations among COL and LLS*

		LCInfo	LCRUU	LCPers	LCDuty	LCProc	LCSoc
LLSMem	r_s	0.084	0.127	0.091	-0.073	0.238	0.161
	p	0.225	0.067	0.188	0.289	< .001	0.020
LLSCog	r_s	0.083	0.148	0.181	-0.104	0.237	0.105
	p	0.230	0.032	0.008	0.133	< .001	0.129
LLSComp	r_s	0.176	0.214	0.146	-0.023	0.035	0.049
	p	0.011	0.002	0.034	0.739	0.613	0.478
LLSMeta	r_s	0.180	0.121	0.210	-0.071	0.172	0.070
	p	0.009	0.079	0.002	0.306	0.013	0.312
LLSAfc	r_s	0.130	0.102	0.064	0.133	0.092	0.076
	p	0.060	0.142	0.357	0.055	0.186	0.275
LLSSoc	r_s	0.180	0.204	0.155	-0.097	0.094	0.086
	p	0.009	0.003	0.024	0.162	0.175	0.217

Conceptions of learning (COL) predictors of language learning strategies (LLS)

To define whether or not and which COL predicts LLS, RTs were conducted. A full model that comprised all the six predictors (COL) was against each of the LLS, and resulted in the identifications of the most important predictors (COL) of LLS shown in Figure 1. The figure shows that RT analyses estimated 4 most important predictors for 4 LLS. However, No significant predictor was estimated for LLSMeta and LLSAfc. Specifically, the figure shows that based on N=210 observations: (1) conceptpion of learning as a process not bound by time or place (LCProc) was the best predictor of memory learning strategies (LLSMem) M= 3.372, SD= 0499, F=15.447, df2=208, p=.001. If LCProc values were <= the cut-off score of 3.653, then the estimated M of LLSMem was 3.178, SD=0.508, n=66 (31.4%). If LCProc values were greater than 3.653, the estimated M of LLSMem was 3.460, SD=0.471, n= 144 (68.6%); (2) conception of learning as a process not bound by time or place (LCProc) was best predictor of cognitve learning strategies (LLSCog), M=3.149, SD=0.531, F=14,649, df2=208, p=.002. If LCProc values were < = the cut-off score of 3.653, then the estimated M of LLSCog was 2.948, SD=0.510, n= 66 (31.4%). If LCProc values were greater than 3.653, the estimated M of LLSCog was 3.241, SD=0.516, n=144 (68.6%); (3) conception of learning as remembering, using, and understanding information (LCRUU) was the best predictor of Compensation learning strategy (LLSComp), M=3.023, SD=0.564, F=7.962, df2=208,p=.047. If LCRUU values were < = the cut-off score of 4.372, then the estimated M of LLSComp was 2.395, SD=0.563, n=126 (60%). If LCRUU values were greater than 4.372, the estimated M of LLSCog was 3.155, SD=0.542, n=84 (40 %). and (4) conception of learning as remembering, using, and understanding information (LCRUU) was the best predictor of social learning strategies (LLSSoc), M=3.059,SD=0.647, F=7.983, df2=208, p=.047. If LCRUU values were < = the cut-off score of 4.150, then the estimated M of LLSSoc was 2.907, SD=0.606, n=84 (40%). If LCRUU values were greater than 4.150, the estimated M of LLSSoc was 3.160, SD=0.655, n= 126 (60 %).

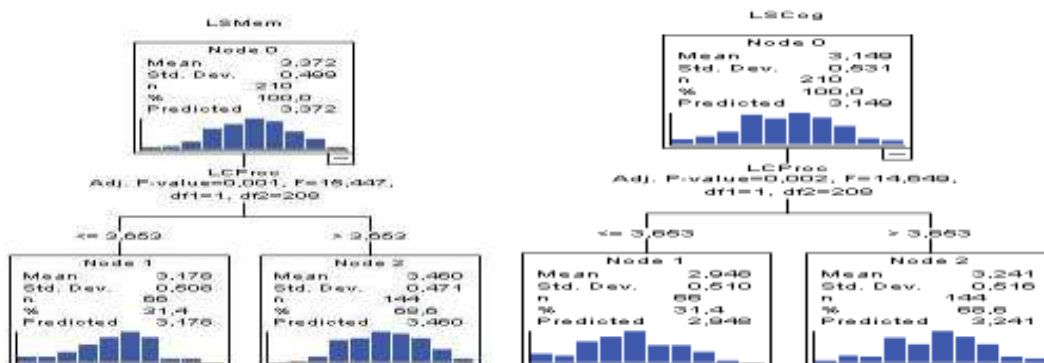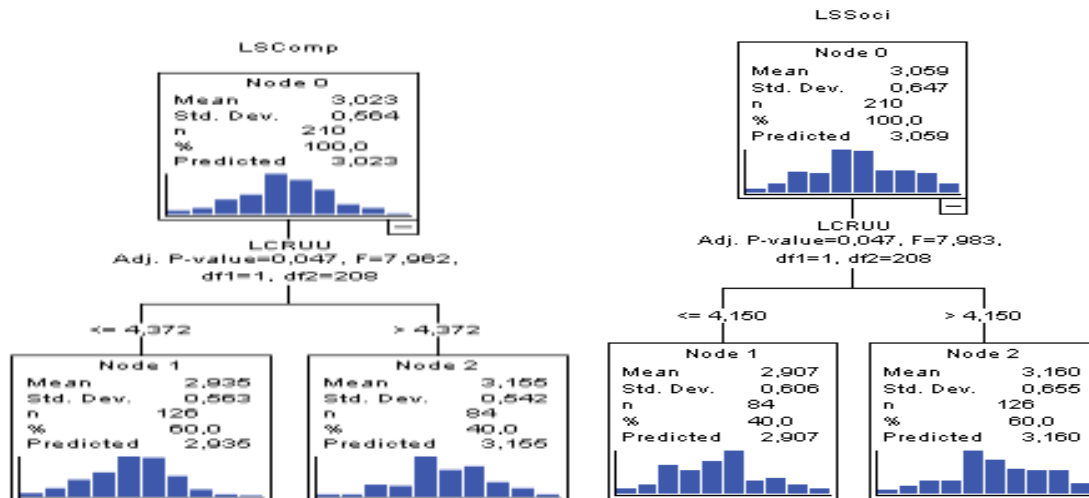**Figure 1.** *Tree-plots for the most important predictors of LLS*

Figure 1. *Continued…*

Discussion

The study revealed that, despite the statistically insignificant mean differences, the respondents' most dominant conception of learning was learning as personal change. When confronted with Surface and Deep Learning theory, it can be readily recognized that the learning conception falls into the deep learning category where learners aim for meanings, problem solving, connecting schemata to new knowledge, and relating theory to practice (Walker, 2012). In fact, the order of dominance of the conceptions of learning identified in the present study reflects a partition that divides them in two halves of deep and surface learning respectively. The first three conceptions in the order, i.e. Learning as personal change (LCPers), learning as the development of social competence (LCSoc), and learning as a process not bound by time or place (LCProc) are all related to deep learning. While the second three conceptions of learning in the order, i.e. learning as gaining information (LCInfo), learning as duty (LCDuty), and learning as remembering, using, and understanding information (LCRUU), are all related to surface learning that focuses on obtaining and reproducing information, task accomplishment, and memorizing facts and procedures (Walker, 2012). These findings suggest that most of the respondents conceptualized learning in the deep learning realm. The findings are also in line with Gan, Liu, and Yang's (2017) study on Chinese pre-service EFL teachers, and Santosa's (2017) study on Indonesian pre-service EFL teachers in the context of the implementation of flipped learning, that found the dominance of deep learning approach among their respondents. A different finding, however, was recorded by Hulreski, Syatriana, and Ardiana (2020) in their study on Indonesian pre-service EFL teachers' learning approach toward vocabulary acquisition where they found alignment to surface learning. This is understandable as vocabulary acquisition requires rote learning. To this end, a preliminary

theory could be proposed here that when dealing with the overall aims of learning, pre-service EFL teachers perceive their conceptions of learning within a deep learning perspective. While, when confronted with specific tasks language learning, such as vocabulary acquisition, they perceive their conceptions of learning within a surface learning perspective.

The descriptive statistics shows that the respondents' most dominant language learning strategies were metacognitive strategies (LLSMem), and the least used strategies were social strategy (LLSSoc). These findings are similar to those of Kamil, Hartono, and Vintoni (2017) who also studied the issue of Indonesian pre-service EFL teachers. However, although also finding the metacognitive strategies as the most used strategies, studies by Lestari and Wahyudin (2020), Tanjung (2018), and Rianto (2020) reported that their respondents' least used strategy was the affective strategies, memory strategies, and compensatory strategy *respectively*. The similarity of the finding of the present and other studies in terms of the most used language learning strategy seems to suggest a common pattern among Indonesian pre-service EFL teachers.

The present study found a positive relationship between the conceptions of learning and the language learning strategies. Although, studies in other fields such as medicine education (Chiu, Liang, Hsu, Chu, Lin, Chen, & Tsai, 2019), education degree program (Chan, 2007), biology education (Sadi, 2017), high school students (Shen, Li, & Lee, 2018) identified such a relationship with a varying magnitudes, as far as the literature is concerned, there has not been research that studied the relationship among conceptions of learning and language learning strategies. Therefore, the finding of the present study regarding the issue is novice in nature.

Overall, the results of RT analysis show that, to some extent, COL predicted LLS. Specifically, the conception of learning as a process not bound by time or place (LCProc) predicted memory strategies (LLSMem) and cognitive strategies (LLCog).The conception of learning as remembering, using, and understanding information (LCRUU) predicted cognitive learning strategies (LLSCog) and compensation learning strategies (LLSComp). These findings convergently concurred with the descriptive statistics that showed the two COLs were the most held conceptions by the participants of the study, and with the results of the nonparametric test of correlation that showed the associations among the two COLs with the four LLS were the strongest, p=<.004. However, regarding the fact that none of the conceptions of learning predicted metacognitive strategies (LLSlMeta), which was the most used strategies, and affective strategies (LLSAfc), which was the least used strategies, the explanation is beyond the scope of the present study.

Conclusion and Recommendations/Implications

This study identified significant positive association among EFL learners' conceptions of learning and their English language learning strategies. The specific conceptions of learning that predicted particular English language learning strategies were also identified. The findings may add some new perspectives to the so far uncharted area between the constructs of conceptions of learning and language learning strategies. In particular, future studies on language learning strategies should consider conceptions of

learning as a factor that affect learners' uses of the strategies. In addition, the findings of this study also provide language educators with an additional lens through which learners' language learning strategies phenomena can be better understood. Considering the delimitations of the current study in terms of focus, sample size, and method, further studies that explore the possibilities of the existence of mediating variables between the two constructs as well as ones that examine the contextual influences are recommended. In addition, studies on the relationships between the conceptions of learning and mastery of English language skills are also needed.

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The author certifies that he has no affiliations with or involvement in any organization or entity with any financial or non-financial interest in the subject matter or materials discussed in this paper.

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