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EFL STUDENTS' ONLINE LEARNING: EPISTEMIC BELIEFS DETERMINE LEARNING STRATEGIES

Ismarita Ida Rahmiati
Universitas Brawijaya, Malang-Indonesia
E-mail: ismarita_ida@ub.ac.id

Ive Emaliana
Universitas Brawijaya, Malang-Indonesia
E-mail: ive@ub.ac.id

Abstract

This study aimed to examine EFL students' cognitive processing, notably based on their epistemic beliefs views and learning strategies towards self-directed online learning. A descriptive quantitative method was used to explore 100 students' learning strategies. The focus is on examining individual knowledge construction through active cognitive engagement on English language exposures and aquisition in online community. The results suggest that students with more sophisticated epistemic beliefs have different learning strategies compare to those who posses simple ones. Students' characteristics which appear to impact their use of learning strategies are discussed. Suggestions for instructional strategies are offered.

Keywords: *EFL, Epistemic beliefs, Learning Strategies, Online Engagement*

INTRODUCTION

Online learning is an interesting English as a Foreign Language (EFL) educational resource, for it provides convinience and flexibility to students. It has been widely used to promote students in academic discourse for knowledge construction. However, developing quality online learning relies on availability of long periods of peer interaction through continual discussions (Moore, 2002), student-controlled reflection time (Schellens & Valcke, 2006), effective collaboractive group environment (Chen & Pedersen, 2012), and cognitive engagement (Kanuka et al., 2007). This study defined quality learning as active cognitive engagement as well as social interaction particularly when using English as a medium of communication in online community.

However, uptaking digital communication tools and online-networked application as media of instructions in learning EFL creates changes on students' demands, needs, and characteristics (McLoughlin & Lee, 2010). A multi-dimensional model, small group oriented, and personalized learning occur shifting teacher-centered approaches (Chen & Pedersen, 2012). Besides, EFL teaching and learning become more participatory, social, and personal (McLoughlin & Lee, 2010). Students can take online learning as beneficial additional learning resources due to its learning quality, cost-effectiveness, flexibility and accessibility (Chen & Pedersen, 2012). Consequently, EFL students can take the advantages to do self-directed learning to enrich exposures to learn

foreign language by engaging in several online activities, like in social media, blogs, vlogs, free online courses, and other resources. The design of many online learning environments appear frequently succeed to take advantage of learning opportunities which the new technology offer and support (Doris & Martin, 2018). Previous research on student engagement reveals that active learning practices may relate to student engagement in specific online resources, including courses (Cole et al., 2019). Many studies have attempted to investigate factors that impact quality of online engagement. These include teaching strategies (Kanuka et al., 2007), medium strategies (Angeli et al., 2003), and course offering and management (Chen & Pedersen, 2012). Accordingly, Zheng et al. (2016) specify that through online self-regulated English learning, some factors can be perceived, including students' goal setting, environment structuring, task strategies and time management, help-seeking, and self-evaluation.

Learning strategies can be defined as thoughts and behaviours which students engage in which are intended to impact cognitive processing, including selection, acquisition, construction and integration of information during learning activities (Zhao & Coombs, 2012). In EFL learning, learning strategies can be categorized into listening, reading, writing, and speaking strategies. In the present study, listening strategies are excluded as feasibility and accessibility of research, thus, it focuses more on the other three skills. Related to reading strategies, Mokhtari & Sheory (2002) measure aspects that affect students' learning strategy, including global reading strategy, problem solving strategy, and support strategy. Hwang & Lee (2017) categorize students' writing strategy into pre writing, whilst writing, and post writing. In pre writing, students prepare ideas and plan to organize compositions. In whilst writing strategy, students reread drafts to examine logical thinking to compose written discourse. Post writing strategy allows students to seek feedback from teachers as well as peers for their final compositions. In relation to some aspects which affect speaking strategies are cognitive strategy use, communication strategy use, and affective strategy use (Huang, 2016).

Those learning strategies are closely related to personal frameworks of learning. According to Hogan (1999), personal frameworks to explore how to students learn comprise three types of perspectives, namely self-referenced, learning-referenced, and discipline-referenced perspectives. When self-referenced perspectives focus on students' goals, capabilities, and interests, learning-referenced perspectives comprise students' learning strategies, and discipline-referenced perspectives mainly explore students' understanding of meta-conceptual frameworks and epistemology. This indicated that students' epistemic beliefs are associated with their learning strategies respectively. Shen et al. (2018) emphasized that students' epistemic beliefs and their conceptions of learning might predict their learning strategies.

Based on previous studies, epistemic beliefs are domain-specific, and worthy of further exploration in different academic discipline. Epistemic beliefs has been regarded as a continuum, ranging from simple to sophisticated beliefs (Emaliana & Lailiyah, 2018). Ketabi (2014) suggested that students with simple EFL epistemic beliefs view English learning as certain and stable, whereas students with sophisticated beliefs view English learning as complex, tentative, and actively constructed. In order to investigate students' EFL epistemic beliefs, Emaliana (2017) suggested

some paradigms. Students with simple epistemic beliefs see learning sources is only found from teachers (teacher-centred learning). Students usually use grammar-translation and cognitive approaches in learning English, which also focus on learning outcome, regardless the process. Meanwhile, students with sophisticated epistemic beliefs believe that their ability to learn English can be improved over time through practicing, for source of knowledge can be found everywhere, inside and outside classroom, including online learning. They also think that making mistakes when learning are reasonable, as learning is not only result, but the processes. Sophisticated students mostly use second language acquisition and communicative learning approaches.

As mentioned above, extensive studies EFL settings have exhibited students' language learning strategies relate to online learning, yet its influence on learning through students' epistemic beliefs views has not been well investigated. In sum, the present study aimed to explore how university students learn EFL by scrutinizing their epistemic beliefs and learning strategies when learning online to shed light on their English language learning. Three questions guided this research.
(1) What learning strategies do simple epistemic beliefs students exhibit in online learning compare to sophisticated epistemic beliefs students?
(2) What levels of online learning strategies do students exhibit across different epistemic beliefs levels?

METHODS

Participants

A total of 115 undergraduate students in English language teaching participated in this study. Only 100 among them had chosen as the samples for valid answers and some withdrawal reasons. The uncompleted questionnaire responses were eliminated from the analysis. Convenience sampling was used to recruit the participants. Among lecturers known to the researchers, those who kindly agreed to cooperate with this study (with their understanding of the basic research aim) assisted in the data collection by asking students to voluntarily fill out the questionnaires. They answer five questionnaire in five different meetings, each ten to fifteen minutes after class session. At the start of the questionnaire survey, each lecturer read the purpose of the study (written in the questionnaires) aloud to his/her students. The questionnaire (comprising demographic question section and closed-item section asking about their previous language learning experience) results were confidential.

Instruments

The aim of the present study was to understand ELT students' epistemic beliefs (Emaliana, 2017), online learning strategies (Zheng et al., 2016), reading strategy (Mokhtari & Sheory, 2002), writing strategy (Hwang & Lee, 2017), and speaking strategy (Huang, 2016). *The EFL epistemic beliefs* consisted 35 items, were composed of seven subsets, i.e. certain knowledge (4 items), fix ability (7 items), omniscient authority (5 items), simple knowledge (4 items), foreign language aptitude (4 items), learning and communication strategies (4 items), and motivation and expectation (4 items). With regard to online learning strategy, online *self-regulated English learning questionnaire* from Zheng et al. (2016) was utilized. There were five subsets of this

questionnaire (10 items), i.e. goal setting (1 item), environment structuring (1item), task strategies and time management (3 items), help-seeking (3 items), and self-evaluation (2 items).

Meanwhile to measure students' reading strategy, *survey of reading strategy* by Mokhtari & Sheory (2002) was used. The following categories were made in the subscales: lobal reading strategy (12 items), problem solving strategy (7 items), and support strategy (8 items). Students' writing strategy was revealed by using 22 items of *English writing strategy inventory* (Hwang & Lee, 2017), which categorize students' writing strategy into pre writing (3 items on cognitive, 2 items on the first language, 1 item on the second language, 1 item on compensatory); whilst writing (1 item on metacognitive, 1 item on cognitive, 1 item on the first language, 1 item on compensatory and 1 item on compensatory), and post writing (2 items on metacognitive, 3 items on revision, 1 item on social, and 4 items on improving writing). Through SPSS 20, each questionnaire validity and reliability were established. Only items which showed obtained coefficient less than .05 were claimed valid.

Data Analysis

The aim of the present study was to know students' learning strategies based on their epistemic beliefs levels to observe their online learning activities. Accordingly, descriptive quantitative was conducted in this study. Descriptive statistical procedure was performed to conduct data collection, notably in the form of percentage. Moreover, as this research employed convenience data, the listwise deletion method was administered to deal with raw data.

FINDINGS AND DISCUSSION

Among 100 participants, it had been discovered that 81% of EFL students possess sophisticated epistemic beliefs, meanwhile, 19% of the participants have simple epistemic beliefs.

Comparison between Learning Strategies Employed by Simple Epistemic Beliefs Students and Sophisticated Epistemic beliefs Students.

Reading Strategy

In order to display the results of sophisticated and simple students' reading strategies clearly, Table 1 was created.

Table 1. Students' Reading Strategy

Dimension	Overall mean score	
	Sophisticated Students	Simple Students
Global reading strategy	74.17	69.73
Support reading strategy	71.70	63.81
Problem solving strategy	84.10	66.70

In other words, students with sophisticated epistemic beliefs tended to use Problem Solving Strategy. Particularly, mostly learning strategies that were used was item no. 13 (*When text*

becomes difficult, I pay closer attention to what I am reading), item no. 23 (*When text becomes difficult, I re-read it to increase my understanding*), and item no. 9 (*I try to get back on track when I lose concentration*). In the other hand, students with simple epistemic beliefs appeared to use Global Reading Strategies, notably item no. 21 (*I check my understanding when I come across new information*), item no. 1 (*I have purpose in mind when I read*), and item no. 3 (*I think about what I know to help me understand what I read*).

According to this finding of this study, students' sophisticated and simple epistemic beliefs level has own strategies. Students sophisticated epistemic beliefs levels learning EFL is tentative or dynamic the teacher can apply communicative approach while teaching. Students' sophisticated epistemic beliefs used Problem solving Strategy (PROB). Students' choices of strategies are varied from trying to stay focused on reading, reading slowly and carefully, and re-reading for better understanding. The present study supports study shows students tend to trying focus on reading. The students' preference focus on reading that the students develop proper attention. When the students concentrate more to the text, they will be able to understand the sequence hard of meaning embedded from the text. The students also re-read for better understanding the text and visualize information from the text. The strategies that are chosen also support theory of Mohktari and Sheorey, (2002) said that the students focused on teaching techniques used when problem develop in reading strategies. The researcher also notices that there are two similar strategies used by students; reading slowly and carefully and re-reading for better understanding.

Students simple epistemic beliefs levels learning EFL is static the teacher can apply GTM approach while teaching. Students' simple epistemic beliefs level used Global Reading Strategy (GLOB) students' choices of strategies are varied from check understanding to across new information, have purpose when reading, and knowing a way to understand the text. The presents study supports Mohktari and Sheorey, (2002), students are carefully planned techniques by which students monitor or manage their reading, and students reading by prior knowledge as their reading strategy when students from simple epistemic beliefs level. It is similar with Emaliana (2017) statements, students' simple epistemic beliefs are product oriented which means that they focus on their achievement while learning English**.** So, students' simple epistemic beliefs reading by purpose and learning focus on achievement.

Writing Strategy

In order to display the results of sophisticated and simple students' writing strategies clearly, Table 2 was created.

Table 2. Students' Writing Strategy

Dimension / **Sub dimension**		**Overall mean score**	
		Sophisticated Students	**Simple Students**
Pre-writing	Cognitive	90.94	84.21
	The first language	51.23	28.94
	The second language	72.21	68.42
Whilst-	Metacognitive	87.65	78.94

writing	Cognitive	67.90	36.84
	L1	79.01	52.63
	Social	54.32	21.05
Post-writing	Metacognitive	93.20	89.47
	Revision	87.65	82.45
	Social	46.91	26.31
	Improve writing skill	82.4	61.83

Accordingly, students with sophisticated epistemic beliefs appeared to use *cognitive* strategy in pre writing, and *metacognitive* strategy in whilst writing and post writing respectively in addition to use memorizing useful English expression when reading English books and when watching English movies to improve their English writing skill generally. Similarly, students with simple epistemic beliefs also tended to use *cognitive* strategy in pre writing, and *metacognitive* strategy in whilst writing and post writing respectively, however, to improve English writing skill generally, they prefer used memorization over useful English expressions gotten from reading English books.

According to the findings, students have their own strategies in conducting writing as one of skills that should be mastered. It is supported by (De Silva, 2014) the present study shows that writing as the strategy and as the performance have the impact in the English for academic purposes. Relating to English writing strategy inventory (EWSI) questionnaire, there are four dimensions as stated from (Hwang and Lee, 2017) they are before writing, when writing, after writing, and to improve English writing skill generally. The results shows students with sophisticated level mostly used cognitive in before writing, simple students have the same result as cognitive become the most strategy used in before writing. Then, in when writing strategy, sophisticated students and simple students have the same results as metacognitive become the most strategy used in this strategy. In the other strategy, as after writing become one of strategy in EWSI by (Hwang and Lee, 2017) both sophisticated and simple students still have same results as metacognitive become strategy most used. Other strategy belong to EWSI questionnaire results is to improve English writing skill generally, have the results as memory become most strategy used with the number items of 19 and 20 with the highest mean score. These results show that although both sophisticated and simple students have same results of which strategy most used in learning English. Therefore both sophisticated and simple students still have their own different ways in learning English.

Speaking Strategy

Table 3. Students' Speaking Strategy

Dimension	**Sub dimension**	**Overall mean score**	
		Sophisticated Students	**Simple Students**
Cognitive strategy use	Processing inductively	69.13	66.66
	Structuring	51.23	67.10
	Analyzing	72.21	66.66

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	Organizing thoughts	70.67	91.22
Communication Strategy use	Elaborating	87.65	72.30
	Reduction	76.54	68.17
	Restructuring	84.25	74.99
Affective strategy use	Self-encouraging	95.06	89.47
	Self-calming	93.82	84.21
	Self-comforting	75.30	68.42
	Self-talk	95.06	89.47

Further, students with sophisticated epistemic beliefs appeared to use *organizing though* strategy in cognitive strategy use. Meanwhile, they appeared to use *restructuring* strategy in communication strategy use, and they tended to employ *self-encouraging* strategy in affective strategy use. Similarly, students with simple epistemic beliefs appeared to use *organizing though* strategy in cognitive strategy use. They also appeared to use *restructuring* strategy in communication strategy use, and they tended to employ *self-encouraging* strategy in affective strategy use.

The finding of this study shows that both sophisticated and simple students have their own strategies. Though the Affective Strategy used by both type of students are same, it still have differences in other aspects or strategies. In COG, the difference between sophisticated and simple is sophisticated students prefer to use Analyzing rather than Structuring as simple students do. Communicative Strategy used by sophisticated and simple are actually similar, yet sophisticated put Elaborating first and then Restructuring while simple students do the other hand. So this result is suitable according to characteristics stated by Emaliana (2017) above. The strategies that are chosen also supported theory of Emaliana (2018) and King and Kitchener (1994) that suggest communicative approach or task based learning are suitable to be implemented to teach sophisticated students while Schommer-Aikins (2004) and King and Kitchener suggest to apply behaviorism approach to teach simple students. Behaviorism approach can help students to know which is right and which is wrong in producing sentences. One of example of behaviorism approach in teaching is using Grammar Translation Method. By knowing the correct structure, students are expected to produce well-structured sentences.

The implementation of teaching speaking not only focus in one epistemic beliefs level but also should consider which teaching method or assessment method that can be used for students with sophisticated and simple epistemic beliefs levels. In previous studies, Marcellino (2005) has suggestion that competency-based language instruction method is suitable teaching method to be applied for students with sophisticated and simple epistemic beliefs level. Teachers not only use behaviorism approach such as Grammar Translation Method or Audio-lingual method, but also use constructivism approach such as communicative language teaching in order to teach both simple and sophisticated learners. In assessing students' achievement, teachers should not only focus on the result, but also the process since simple students prefer to focus on the result while learning and sophisticated students prefer to focus on learning process rather than the result as Emaliana (2017) stated.

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Students' Online Learning strategies accros Different Epistemic Beliefs Levels

Table 4. Students' Online Learning Strategy and Epistemic Beliefs

Online Strategy English Learning	Epistemic Beliefs Level	Frequency	Percentage
Advanced	sophisticated students	54	87.1%
	simple students	8	12.9%
Basic	sophisticated students	27	71.05%
	simple students	11	28.95%

Table 4 shows the percentage of simple and sophisticated epistemic beliefs in online learning strategy English learning (OSEL). The calculation was obtained by firstly dividing any group of students who have basic and advanced OSEL and simple and sophisticated epistemic beliefs. Then, the researchers categorized it again. It is found that from 38 Basic OSEL students, 28.95% of them have simple epistemic beliefs and 71.05% have sophisticated epistemic beliefs. While, from 62 Advanced OSEL students, there are 12.9% of them are simple and 87.1% sophisticated.

Firstly, from the OSEL questionnaire, it was found that more than 50% of the participants are having Advanced OSEL. 38% of them are having Basic OSEL and 62% are having Advanced OSEL. In goal setting factor (item 1), it shows that the mean score for Basic OSEL responses is 0,21 which means that students tend to not set their goal in the learning process. Unlike the response in Advance OSEL, the gap of the mean score is quite far 0,63. It indicates that in the learning process, setting a goal is a necessity for the students. In environment structuring factor (item 2), both Basic and Advanced OSEL students agree that they need a good and comfortable learning atmosphere. In item 3-5, task strategies and time management factor, Advanced OSEL students are do manage their time and adjust their learning strategy, while Basic OSEL students are not. Likewise, Advanced OSEL students have a tendency to seek help and communicate with peers or lecturers to evaluate and monitor their learning (item 6-10).

For EFL Epistemic Beliefs questionnaire, unexpectedly the result of the study shows that 81% of students are sophisticated. For them, learning English is such a necessity. They believe that English is dynamic. It is not something inherited, but people need to work hard if they want to master the language. When people try to learn it, they will improve their skill over time. Students also believe that everyone can learn English from the beginning, no matter what age, gender, or even their background (item 24-25). Students with sophisticated epistemic beliefs have an orientation of process. They do not feel shame to make mistakes and will keep practicing.

Oppositely, students with simple epistemic beliefs believe that learning EFL is static. They gave positive responses to the omniscient authority dimension. Meaning that they agree if learning comes from authority. The orientation of simple epistemic beliefs students is the product, no matter how the process they pass. Fortunately, it was found that only 19% of the participants have simple epistemic beliefs.

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In result, the participants of this study are having Advanced OSEL with sophisticated epistemic beliefs. As in table 4, 54 students have it. It means that students with sophisticated epistemic beliefs have more effort on their learning process. Moreover, students take action to monitor their online learning processes for course-related purposes, use applicable strategies to gather relevant online resources, and evaluate their learning outcomes. In line with Franco, et al. (2012), that higher epistemic belief is associated with more learning processes and outcomes than lower ones. As mentioned above, in the learning process, Advanced OSEL students communicate with their peers, confirmed by Emaliana & Lailiyah (2018), sophisticated students who possess these characters. Likewise, students with Basic OSEL are students who have simple epistemic beliefs. As shown in table 4.5, from 19 simple epistemic beliefs students, 11 of them are having Basic OSEL. Explained by Cheng (2013), students with low-level SRL only express their preparation in terms of goal setting and planning for their tasks, whereas those with high-level SRL exhibit practical actions of supervising, regulating and evaluating their learning processes and outcomes.
Other than that, it was found that there were 27 students with sophisticated epistemological beliefs that having Basic OSEL. Students here have such a positive view or belief in English learning but they have less effort or even did not performing self-regulated learning. In line with Chiu (2013) findings, students with certain sophisticated epistemic beliefs did not possess tendencies to undertake self-regulated learning in Internet-based environments.

The strategies that are chosen by each type of epistemic beliefs are quite different. Communicative Approach is highly suggested to be used in teaching sophisticated students while GTM is considered to be suitable method in teaching students with simple epistemic beliefs.

Some instructional design guidelines may help students to avoid problems and engage in deep learning process. Firstly, to promote students' engagement in online learning, lecturers can offer guidance and instructions on how to integrate online sources effectively to support classroom activities, as in blended learning. The lecturers could give coach to students to manage time and tasks, and help them to take control of their learning in the form of guided enrichment tasks. Secondly, regarding into the significance of the study, lecturers are expected to reconsider to choose communicative approach or scientific approach more often in teaching the first-year students since most of the first-year students are sophisticated learners and the approaches are suitable with characteristics of sophisticated students.

CONCLUSION AND SUGGESTION

Epistemic beliefs own by particular students can be explored to identify students' learning strategies for classroom activities as well as online learning activities. However, future investigations are needed. First, the results of the current study are based on a small sample of student volunteers. Future study can increase the sample size to confirm observation regarding correlations of epistemic beliefs, learning strategies, and online learning. Further, future study could also investigate students and lecturers' perceptions on online learning activities quantitatively and qualitatively.

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