EFL Students' Epistemological Beliefs and Use of Cognitive and Metacognitive Strategies in Bahir Dar University

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Abstract
This study attempted to investigate the level of EFL learners' epistemological beliefs and learning strategy use as well as the contribution of epistemological beliefs to their learning strategy use in Bahir Dar University. Comprehensively selected 136 EFL students at the Faculty of Humanities of Bahir Dar University responded to modified versions of Epistemological Beliefs Questionnaire and Motivated and Self Directed Learning Strategies Questionnaire. The descriptive statistics showed that the participants generally held a low level of epistemological beliefs (mean scores ranging from 2.49 to 3.09 on a five-point scale) and they moderately used cognitive and metacognitive learning strategies (mean scores ranging from 3.29 to 3.82 on a five-point scale). The results of multivariate analysis indicated there was a significant multivariate effect of epistemological beliefs on the various dimensions of learning strategies, contributing 15.8% of the variance. The follow-up univariate analyses also showed the difference in epistemological beliefs had a significant impact on their use of all dimensions of learning strategies except rehearsal strategy. This means that EFL students with sophisticated epistemological beliefs, compared to their counterparts with naïve beliefs, are more strategic in handling learning situations through deploying appropriate higher order cognitive and metacognitive learning strategies.

Keywords: epistemology, beliefs, cognitive, metacognitive, strategy, use

Introduction

Epistemology and epistemological beliefs are issues related to the nature of knowledge and learning as well as beliefs about how people come to know, construct and evaluate knowledge (Hofer & Pintrich, 2002; Schommer-Aikins, 2004). The research on epistemological beliefs was pioneered in 1977 by Perry, who identified undergraduate students at Harvard University in terms of four main ways; namely, dualism, multiplism, relativism and commitment (Brownlee, Purdie & Boulton-Lewis, 2001). Departing from the developmental perspectives, Schommer (1990) initiated a new line of research envisioning epistemological beliefs as a multidimensional construct, consisting of a system of relatively independent beliefs about the nature of knowledge and the process of knowing. These dimensions include "the structure, certainty, source of knowledge, the control and speed of knowledge acquisition" (Schommer, 1990, p. 498). Schommer (1990) and Schommer and Walker (1995) argue that these belief dimensions are predominantly similar across domains or fields of study though others (like Alexander, 2001; Hofer, 2000; Mori, 1999) believe that epistemological beliefs may vary across fields of study.

The role of epistemological beliefs in learning has been evidenced in research literature as shadowing classroom practices. Research indicated that epistemological beliefs have a significant impact on teachers' decision making skills (Brownlee et al. 2001; Tsai, 2000) and on their interpretation of instructional practices (Hammer & Elby, 2002; Hammer, 2002; Many, Howard, & Hoge, 2002). Similarly, Chan (2003) found a strong relationship between Hong Kong EFL

student teachers' epistemological beliefs and their conceptions about teaching/learning. Sing and Khine (2008) also reported compatibility of Singaporean pre-service teachers' epistemological and pedagogical beliefs underlying many of the constructivist oriented reform initiatives. Donmoyer (2001) also confirmed that epistemological beliefs define how teachers handle different classroom problems. Likewise, Hashweh (1996) also reported that teachers' epistemologies affect their use of teaching strategies and their openness to student alternative conceptions.

Regarding students' behaviour, research indicated that epistemological beliefs have a significant impact on students' cognitive processing (Hofer, 2001; Kardash & Howell, 2000; Qian & Alvermann, 2000), and on self-regulated learning strategies (Dahl, Bals, & Turi,2005; Donald, 2002; Hofer, 2001; Schreiber, Shinn & Weems, 2003). For example, Dahl et al (2005) confirmed that the students who believed that knowledge is simple and inherent mostly used repetition strategies, whereas they used metacognitive and critical-thinking strategies less. Another study concluded that students who believed that learning depends on effort had more positive attitude towards school and academic tasks, higher motivation level, better concentration, and less exam anxiety (Deryakulu, 2004, cited in Guven, 2012).

Literature review

Ethiopia has been undergoing numerous educational reforms in the last two decades. The education and training policy introduced an educational reform aimed at creating more constructivist oriented student-centred and cooperative learning environments (Ministry of Education [MOE], 1994). Accompanying this policy, a series of reform program packages came into effect. One of them was Teacher Education System Overhaul [TESO] (MOE, 2003). These educational reforms call for changes not only in teaching but also the relevant beliefs that teachers and students hold with respect to knowledge, learning and teaching. Constructivist oriented teaching and learning activities require teachers and students to view knowledge claims as uncertain and knowing as a process of constructing personally meaningful understanding. This is different from traditional teaching, which treats knowledge as largely unproblematic verified facts to be absorbed by passive recipients.

Despite all the reform efforts made in Ethiopia, little seems to be changing in terms of students' performance. Even though a big stride has been made in improving access to school and university, pervasive complaints about poor quality of output are heard from different stakeholders. Acknowledging the rapidly expanding access to primary education and the significantly improved enrolment, Alemayehu (2014, p. 8) expressed his worry about the quality in the following way: " … there has been fear of prevalence of a kind of trade-off between expanding access and ensuring quality." Endalkachew (2017) also stated that the quality dimension is more worrisome. The three national learning assessments carried out by the National Organization for Examinations [NOE] in 2000, 2004, and 2008 witnessed regressing tendency in quality of learning. For example, a look into the 2008 assessment report reveals that only 13.9 percent of Grade 4 students appeared proficient, 24 percent attained a basic minimum level and the remaining 62.1 percent fell below the basic minimum composite score (NOE, 2008). The Ministry of Education admits that "there remain huge gaps between what was planned and what has been achieved at all levels" (MoE, 2015, p.16).

In relation to students' English language proficiency, research works indicated that their proficiency has been declining at all levels (Amlaku, 2010; Girma, 2003; Haregewoin, 2008; Tekeste, 2006). For example, Amlaku (2010) stated: "The learners' proficiency remains always poor and the effectiveness of the English language teaching remains always questionable" (p.10).

Haregewoin (2008) also pointed out a common belief among university instructors that the language proficiency of many preparatory students declined in terms of expectation.

Regarding new university entrants' competence, Atlabachew (2017) argues that students who complete Grade 11 and 12 are not well prepared in the preparatory school and most of them are not competent enough to join higher learning institutions. Similarly, Misganaw (2012, p.320) reported "students joining HE [Higher Education] are said to lack basic English language, reading, critical thinking and analysis and writing skills, which are essential for their success in HE".

The academic capability of tertiary level English majoring students in Ethiopian context is worth considering. Nowadays, Ethiopian university students' placement to different fields of study is based on their achievement in Higher Education Entrance Examinations [HEEE]. It has been a common practice that high achieving students in the social science stream enjoy the privilege to study law, accounting, economics and management, which are thought to lead to better-paying jobs. Those social science stream students who score near the lowest passing marks in HEEE secure their placement in Band 7, which includes fields like history, geography, civics and ethical education, and language studies. The researcher's observation confirms that the same principle is also applied when these students are placed at department level. Students who have relatively better scores apply to departments other than Department of English Language and Literature. Finally, students with low scores in HEEE are forced to join the English Department. It is possible to say that most of these entrants simply register for courses without their consent, for the very fact that they believe that their competence in English is too low which in turn induces some fear in them to pursue this field of study.

In the mean time, Ethiopian students come from a society which holds different traditional beliefs about knowledge and process of learning. On one hand, the society holds a strong traditional belief that learning ability is related to destiny, which is reflected through a popular saying which can be roughly equated to "*One destined to know masters in forty days; one destined to toil masters in forty years*." On the other hand, the society also subscribes to another strong belief that learning is accomplished through consistent effort and hard work. Teachers in the Ethiopian traditional education encourage their slow learners to put their maximum efforts and not to give up. The society has also a strong tradition of valuing authority figures in the learning process in religious schools. Students were traditionally expected to absorb all what the teachers or elders impart to them. Though this traditional belief is challenged by many due to the introduction of recent educational philosophies these days, a lot more people maintain the belief that knowledge comes from authority figures or experts.

In light of cognitivist theory of learning, these students should be empowered to regulate their own learning by maintaining more positive attitude and higher motivation level, by planning and deploying different cognitive strategies, and by monitoring and evaluating their learning process efficiently. Learners' use of cognitive and metacognitive learning strategies is a major component of self-regulated learning which is an important construct in language education with its focus on the way students initiate, monitor and exert control over their own learning (Boekaerts & Cascallar, 2006; Efklides, 2011; Zimmerman, 2000).

Recent research undertakings have attempted to blend different theoretical traditions in order to capture the complexity of the self-regulated learning processes. Many researchers (e.g., Donald, 2002; Hofer, 2001; Hofer & Pintrich, 1997; Muis & Franco, 2009; Schreiber, Shinn & Weems, 2003) confirmed that learners' reasons for applying different techniques in and taking responsibility for their learning process are mediated by their epistemological beliefs.

Despite the growing interest in the area, very little empirical research has been conducted in examining the relations between epistemological beliefs and specific processes of self-regulated learning (i.e., cognitive and metacognitive) in Ethiopian EFL context. As Bråten and Strømsø (2005) suggested, it is necessary to conduct studies in the cultural context where respect for authority is valued highly.

Nothing is known about these tertiary level EFL students' epistemological beliefs and use of strategy, so what makes these EFL students tend to select and use some learning strategies in their practice is an issue requiring further research as their epistemological beliefs seem to be involved. Therefore, this study aimed at identifying the EFL students' epistemological beliefs and their use of cognitive and metacognitive learning strategies and investigating to what extent their epistemological beliefs contribute to their use cognitive and metacognitive learning strategies.

Research Questions

Q1. What is the level of EFL students' epistemological beliefs?
Q2. To what extent do EFL students use cognitive and metacognitive learning strategies?
Q3. How much does EFL students' epistemological belief influence their use of cognitive and metacognitive learning strategies?

Methodology

Research Design

This survey study is both descriptive and analytical. The descriptive part involved the use of self-administered questionnaires to collect data from university level EFL learners and to measure participants' level of epistemological beliefs and use of cognitive and metacognitive learning strategies. The analytical part dealt with analysis of data to examine the contribution of their epistemological beliefs as an independent variable to their use of cognitive and metacognitive learning strategies as combined dependent variables. To this end, participants were classified into two groups based on their scores on the independent variable: sophisticated epistemological belief group comprising those who scored above the median and naïve epistemological belief group comprising those who scored below the median. Then, the two groups' use of cognitive and metacognitive learning strategies as combined dependent variables and as separate variable was analyzed through MANOVA and ANOVAs, respectively.

Participants

Participants (N = 136; 55 females, 81 males) in this study were all first, second and third year English language and literature undergraduate students enrolled in Bahir Dar University in the 2015/16 academic year. These students were selected using a comprehensive sampling technique. The participants' age ranged from 17 to 42 (M = 20.52, SD = 1.49). All of study participants were proficient users of Amharic language though it was a second language to some of the participants who were also using other Ethiopian languages as a mother tongue.

Instruments

Two modified forms of standardized questionnaires, having undergone a reliability test, were employed in this study.

Epistemological Beliefs Questionnaire (EBQ)

The first instrument used in this study was a modified and abridged form of EBQ (*Epistemological Beliefs Questionnaire)* developed by Schommer (1994) to measure students'

beliefs about knowledge and the process of knowing. The original questionnaire consists of 63 items with a five-point rating Likert scale type ranging from "Strongly Agree" to "Strongly Disagree" in five dimensions; however, the researcher selected and modified only 45 of these items. Then, a factor analysis ought to have been conducted to decide on the items to be included in the final form of the questionnaire by determining the interrelationships among the items and their corresponding factors. However, because of the small size of the participants, the factor analysis could not be applied. Instead, having administering the questionnaire to the respondents, the researcher ran a reliability test (using Cronbach Alpha on SPSS software) and item-total correlation analysis to check the internal consistency of the items and to screen the bad items, respectively, in each dimension. Finally, the participants' responses to 30 items were considered for final analysis. Based on Schommer's proposal, the modified instrument included the following five dimensions of personal epistemology with their reliability indices:

i) Certainty of Knowledge (7 items, alpha = .83, statements about stability of knowledge ranging from the belief that knowledge is unchanging (naive) to the belief that knowledge is evolving (sophisticated);

ii) Source of Knowledge (6 items, alpha= .75, statements about source of knowledge ranging from the belief that knowledge comes from omniscient external authority (naive) to the belief that knowledge is gleaned from reason and evidence(sophisticated);

iii) Control of Knowledge (5 items, alpha = .82, statements about ability to learn ranging from the idea that ability to learn is fixed at birth (naive) to the idea that ability to learn can be changed, improved and developed over time (sophisticated);

iv) Structure of knowledge (6 items, alpha = .71, statements about knowledge ranging from the belief that knowledge is best characterized as isolated bits of knowledge (naive) and pieces to knowledge is best characterized as highly interrelated networks (sophisticated); and

v) Speed of Knowledge Acquisition (6 items, alpha = .79, statements about the speed of learning, ranging from the belief that learning is quick or all-or-none (naive) to the belief that learning is gradual (sophisticated).

Learning Strategy Questionnaire

The other instrument that study employed is a modified self-report questionnaire adapted from Pintrich, Smith, Garcia, and McKeachie's (1993) Motivated Strategies for Learning Questionnaire (MSLQ) designed to assess college students' motivational orientation and their use of different learning strategies for a college course. The original instrument consists of 81 items in the two sections (a motivation section with 31 items and a learning strategies section with 50 items). However, for this study the researcher selected and used only 31 items from the latter section of the original instrument, with a five-point Likert scale ranging from "Always True of me" to "Never True of me".

These items composed the following five subscales, comprising four cognitive and one metacognitive self-regulation strategies: (i) a six-item *rehearsal sub*scale, to measure students' use of strategies to memorize and retain the course content (alpha = .78); (ii) a six-item *organization sub*scale, to measure their use of strategies to organize new information to perform learning tasks (alpha = .77); (iii) a five-item *elaboration sub*scale, to assess their use of elaboration strategies like paraphrasing, summarizing (alpha = .71); (iv) a five-item *critical thinking sub*scale, to assess their use of critical thinking strategies like applying previous knowledge to new situations and making critical evaluations of ideas (alpha = .80); and (v) a nine-item *metacognitive self-regulation sub*scale, to assess their use of metacognitive control

strategies like planning, setting goals, monitoring one's comprehension, and regulating performance (alpha = .83).

Data Analysis and Procedures

To prepare data for analysis, the summated rating method was used in scoring the tools. This means composites for both scales were produced by adding up scores on relevant epistemological belief and learning strategy items on the questionnaire and dividing the totals by the total number of items. This method controls for error effects that are due to a participant's random selection of responses (Schmidt & Hunter, 1999). Each response was associated with a point value, where a five-point value was assigned to "Strongly Agree" and "Always"; and a one point value, to "Strongly Disagree" and "Never". Items with negative statements were reversely coded so that higher scores on the scale would indicate (a) higher level of beliefs, and (b) better use of cognitive and metacognitive strategies in their EFL courses.

Then, exploratory data analysis was conducted using descriptive statistics to determine the possibility of applying the inferential statistics, MANOVA. Accordingly, the exploratory data analysis proved that the data did not have any problem of normal distribution, multicollinearity, outliers, homogeneity variance-covariance matrices.

Thereafter, descriptive statistics were employed to show the sample population's epistemological beliefs and use of learning strategies. Finally, to find out about the effect of EFL students' epistemological beliefs on their learning strategies, multivariate and univariate analyses of variance (MANOVA and ANOVAs) were used with beliefs clusters (Naïve vs. Sophisticated) as an independent variable and the five dimensions of learning strategies (rehearsal, organization, elaboration, critical thinking and metacognitive strategies) as combined dependent variables. To run these tests, the belief clusters had to be formed by classifying the respondents into two belief groups at the median (Median= 2.88): a sophisticated epistemological beliefs group who scored above the median (*N=69*), and a naïve epistemological beliefs group who scored below the median (*N=67*).

Results

Epistemological Beliefs

In an attempt to answer the first research question, the mean scores and standard deviations were computed from the participants' responses to those five sub-scales of epistemological beliefs. The figures in Table 1 below indicate the overall mean scores of the belief dimensions were around the midpoint of the response scale, which do not suggest that the participants have sophisticated beliefs about knowledge and process of knowing.

Table 1. *Descriptive Statistics of the EFL Students' Epistemological Beliefs*

EPISTEMOLOGICAL BELIEF	*N*	Mean	*Std*. Deviation
Certainty of Knowledge	136	2.74	.843
Source of Knowledge	136	3.09	.583
Control of Knowledge	136	2.49	.672
Structure of Knowledge	136	2.97	.711
Speed of Knowledge Acquisition	136	2.96	.735
Overall Epistemological Belief	136	2.85	.438

The mean score of the first dimension Certainty of Knowledge (*M* = 2.74), which is a considerably below the midpoint of the five-point rating scale (3.00), suggests that a number of students in the study tended to agree that knowledge is fixed and certain. This may imply that the respondents are not likely to entertain the sophisticated view that knowledge is tentative and ever-changing. Though the highest mean score (*M* = 3.09) is on Source of Knowledge dimension, it is a little higher than the mid-point of the one-to-five scale. This indicates that the participants held a bit more sophisticated belief in this dimension than in any other dimension. However, this mean score is not large enough for anyone to claim that the participants had a strong belief that knowledge is basically created through personal experience. This means these students still tended to hold the view that knowledge is derived from authority figures or the view that knowledge is handed down by experts or authorities. The mean score of the third dimension Control of Knowledge (Innate/Fixed Ability) (*M* = 2.49), which is far below the mid-point of the scale, suggests that there is a strong tendency among the students to believe that learning ability is not acquired and changeable, rather it is innate or fixed. The mean score of the fourth dimension Structure of Knowledge (Simple Knowledge) (*M* = 2.97), which is close to the mid-point of the one-to-five scale, suggests that there is a little tendency among the students to believe that knowing is not a simple task as such, rather it is something to be accomplished through a slow progression. In the same way, the mean score of the fifth dimension (*M* = 2.96) Speed of Knowledge Acquisition (Learning Effort/Process), which did not differ from the other belief dimensions, signifies a similar little tendency to believe that knowledge is created through learning effort and process or that knowing or process of knowledge acquisition requires hard work and effort.

Finally, the responses to all items in those five dimensions were transformed by computing their mean score to obtain the measure of their general epistemological beliefs. As shown in last row of Table 1, the mean score for overall epistemological beliefs (*M* = 2.85), which is considerably below the mid-point of the scale, reveals that the participants, in general, had less sophisticated epistemological beliefs.

After computing the mean scores for each participant from the responses to all items in those five dimensions, the data were arranged in a descending order to find the median. Then, the participants were classified by their overall epistemological belief scores into two belief groups using the median (2.88) as dividing line. Therefore, the respondents who scored 2.88 and above (N = 69) formed a sophisticated epistemological beliefs group, and those who scored below 2.88 (N = 67) comprised a naïve epistemological beliefs group.

EFL Students' Use of Learning Strategies

As it has been mentioned in the data analysis procedure, before trying to apply different statistical analyses, the data on the dependent variable had to be explored to check that all the assumptions for MANOVA were met. Table 2 below shows that the values of skewness and kurtosis are within (-2 and +2), which suggest the data obtained through the five subscales of learning strategy use can be said to be normally distributed (Rubin, 2010).

In order to answer the second research question, mean scores and standard deviations were computed for the participants' responses to the five subscales of learning strategy use. The results of the data analysis are presented below.

Table 2. *Descriptive Statistics of the EFL Students' Use of Learning Strategies*

	Epistemological Belief Group	N	Mean	Std. Dev.	Skewness	Kurtosis

REHEARSAL STRATEGY USE	Naive	67	3.75	.391	-0.150	-0.624
	Sophisticated	69	3.88	.514	1.207	-0.507
	Total	136	**3.82**	.460	-0.692	-1.133
ELABORATION STRATEGY USE	Naive	67	3.37	.373	-0.645	-0.192
	Sophisticated	69	3.60	.449	-0.148	-1.068
	Total	136	**3.49**	.427	0.235	-0.740
ORGANIZATION STRATEGY USE	Naive	67	3.55	.490	-1.535	-1.202
	Sophisticated	69	3.83	.505	-0.806	-0.507
	Total	136	**3.69**	.515	-1.322	-0.842
CRITICAL THINKING STRATEGY USE	Naive	67	3.33	.432	0.778	-0.408
	Sophisticated	69	3.60	.532	-0.498	-1.068
	Total	136	**3.47**	.504	0.687	-0.830
METACOGNITIVE STRATEGY USE	Naive	67	3.11	.548	0.153	-0.494
	Sophisticated	69	3.46	.542	-0.100	-0.808
	Total	136	**3.29**	.571	0.105	-0.847

The results shown in Table 2 above indicate the total mean scores (N = 136) are all well above the midpoint of the one-to-five response scale and the standard deviations are small enough to suggest smaller variations in the participants' responses. The mean score on the first subscale (rehearsal strategy use, M = 3.82), the most frequently used learning strategy, denotes that the respondents tended to depend on imitation, memorization, repetition much often in their language learning. The mean scores on the second, third and fourth subscales (elaboration, M = 3.49; organization, M = 3.69; critical thinking, M = 3.47) which are less than the one obtained in the first subscale denote that the students are less dependent on these higher order cognitive strategies. The mean score on the fifth subscale (Metacognitive strategies, M = 3.29) shows that it was least frequently used learning strategy, which indicates a modest degree of monitoring and orchestration of cognitive strategies appropriate for handling various learning situations. In general, these EFL learners tended to rely more on lower order cognitive strategies than higher order ones and to depend on the metacognitive strategies less frequently than the cognitive ones.

Influence of Epistemological Beliefs on Learning Strategy Use

To answer the third research question, the next step was determining whether or not students with sophisticated epistemological beliefs reported statistically different levels of use of cognitive and metacognitive strategies. To run these tests, the belief clusters had been formed by classifying the respondents by their overall epistemological belief scores into two belief groups at the median (2.88). Then a multivariate analysis of variance (MANOVA) was applied to know if there existed a significant multivariate effect which indicates that epistemological beliefs significantly impact students' use of learning strategies (the combined dependent variables). The result of this omnibus test is presented in Table 3 below.

Table 3. *Multivariate Analysis of Variance of Learning Strategy Uses and Epistemological Beliefs*

Type of Learning Strategy Use	Epistemological Belief Group	*N*	Mean	*Std*. Deviation	Wilk's Lambda	*F*-ratio	*df*	*Sig*.	Partial Eta squared
Rehearsal Strategy	Naive	67	3.75	.391					

Use	Sophisticated	69	3.88	.514					
Elaboration	Naive	67	3.37	.373					
Strategy Use	Sophisticated	69	3.60	.449					
Organization	Naive	67	3.55	.490	.842	4.864	5,	.000	.158
Strategy Use	Sophisticated	69	3.83	.505			130		
Critical Thinking	Naive	67	3.33	.432					
Strategy Use	Sophisticated	69	3.60	.532					
Metacognitive	Naive	67	3.11	.548					
Strategy Use	Sophisticated	69	3.46	.542					

As can be seen in Table 3 above, the students with naïve epistemological beliefs scored lower in their use of all the dimensions of learning strategies than those with sophisticated beliefs did. Participants with naïve epistemological beliefs rated their use of learning strategies in a descending order as follows: rehearsal strategies (M=3.75); use of elaboration strategies (M=3.37); use of organization strategies (M=3.55); use of critical thinking strategies (M=3.33) and their use of metacognitive strategies (M=3.11). Even though participants with sophisticated epistemological beliefs rated their use of these five dimensions of strategies higher than their counterparts did, the hierarchical order of use of these strategies in terms of frequency is the same. When the differences in use of these strategies between these two groups of students are compared, the smallest difference (0.13) is observed in the use of rehearsal strategies (Naïve Epistemological Belief Group, M=3.75 and Sophisticated Epistemological Beliefs Group, M=3.88) and the largest difference (0.35) is observed in their use of metacognitive strategies (Naïve Epistemological Belief Group, M=3.11 and Sophisticated Epistemological Beliefs Group, M=3.46).

As shown in Table 3, the MANOVA results show that there existed a significant multivariate effect, $F_{(1,\ 130)} = 4.867$, $p < .05$, indicating that epistemological beliefs had a significant impact on students' use of learning strategies (the combined dependent variables). The partial eta squared (.158) in Table 3 denotes that the EFL students' epistemological beliefs account for 15.8% of the variance in their language learning strategies.

This omnibus test was followed by univariate analyses of variance (ANOVAs) for the five dependent variables so as to decide on the partial effects of students' epistemological beliefs on their use of each cluster of learning strategies. Table 4 below presents the results of analyses of the univariate effects of epistemological beliefs on each of the five clusters of learning strategies.

Table 4. *Univariate Effects of Epistemological Beliefs on Students' Use of Learning Strategies*

Use of Learning strategies	*Df*	*F*-ratio	*Sig*.	Partial Eta Squared
Elaboration Strategy Use	1, 134	9.949	.002	.069
Organization Strategy Use	1, 134	10.253	.002	.071
Critical Thinking Strategy Use	1, 134	11.061	.001	.076
Rehearsal Strategy Use	1, 134	2.620	.108	.019
Metacognitive Strategy Use	1, 134	14.072	.000	.095

As shown in Table 3, the students in the naïve epistemological beliefs group used all clusters of the learning strategies less frequently than those in the sophisticated epistemological belief group. However, Table 4 depicts that, even though the naïve epistemological beliefs group members used the first cluster of the rehearsal strategies less frequently than those in the sophisticated epistemological belief group did, the difference is not statistically significant, signifying a non-significant impact of epistemological beliefs on the use of the first strategy cluster (rehearsal strategies). Both the F-statistics, $F_{(1,130)} = 2.620$, $p > .01$, and the effect size (Eta Squared = .019 or 1.9%) indicate that the epistemological belief difference between the two groups did not bring about a significant change in their use of the rehearsal strategies. This means that both groups did not differ in their use of this lower order cognitive strategy cluster.

On the other hand, Table 4 clearly shows that participants in the sophisticated epistemological belief group had significantly higher scores than those in the naïve epistemological beliefs group on use of elaboration strategy, $F_{(1,130)} = 9.949$, $p < .01$; on use of organization strategies, $F_{(1,130)} = 10.253$, $P < .01$; on use of critical thinking strategies, $F_{(1,130)} = 11.061$, $p < .01$; and on use of metacognitive strategies, $F_{(1,130)} = 14.072$, $p < .01$, all of which confirm that the difference in epistemological beliefs between the two groups significantly impacted their variation in use of each of these four clusters of strategies. Here the alpha level has been adjusted to .01, (.05/5; i.e., dividing the normal alpha level by the number of dependent variables) based on Bonferroni's correction to compensate the increment of Type I error due to the effect of analyzing the univariate analyses of variance. The Eta Squared coefficients which reflect the effect sizes of epistemological beliefs on each of these strategy clusters indicate that epistemological beliefs differences accounted for a considerable proportion of variance in students' learning strategies. They accounted for 6.9%, 7.1%, 7.6% and 9.5% of variance in their use of elaboration, organization, critical thinking and metacognitive strategies, respectively, which are all significant at 0.01 alpha levels in the F-statistics. This means that both groups differed in their use of metacognitive and higher order cognitive strategy clusters because of their difference in epistemological beliefs.

Discussion

In general, the result of this study showed that both the cognitive strategies and metacognitive strategies were prevalent among the students but there was a greater tendency for students to adopt the lower order cognitive strategies than the higher order ones and the cognitive strategies than metacognitive ones. This means that these EFL students place more emphasis on lower order learning strategies such as rehearsal and memorization at the expense of higher order ones such as critical thinking and metacognition. This may indicate that these EFL students have a perception that emphasizes a surface approach or strategy or that the teaching practice in such EFL classes largely involves simple and closed activities, focusing on a narrower range of skills. This finding is consistent what the literature says about low-achieving students who actively avoid challenging tasks and reveal perceptions of low ability.

In this study, the observed mean scores of EFL students' overall and each dimension of epistemological beliefs, being considerably below the mid-point of the measuring scale, indicate that the students showed a tendency to hold less sophisticated beliefs about knowledge and process of knowing. This means that the students did not tend to hold a very strong belief that knowledge is created through personal experience and that knowledge is tentative and ever-changing. This may suggest that these EFL students are less influenced by recent views of knowledge and its acquisition process – the constructivist approach promoted by the recent paradigm shift in Ethiopian education. This can be associated with the influence of the

traditional value that expects learners to abide by authority figures and elders and teachers should not be challenged. The tendency could be attributed to the influence of the traditional learning and teaching in religious context, where dogmatic principles prevail.

The tendency to hold a less sophisticated belief that learning ability is acquired and is changeable is partly inconsistent with the strong tradition of beliefs in effort which encourages students to believe they can improve their ability and performance through hard work and effort. Despite the traditional value of effort and hard work placed in education, the result of the study implied EFL learners' little tendency to believe that knowledge is created through learning effort and process. This means the traditional belief that education and learning is associated with effort is inconsistent with this finding.

Generally speaking, the mean scores of the five dimensions of beliefs signify that the EFl learners, as tertiary level students, have less sophisticated epistemological beliefs. These findings are not consistent with what many researchers have suggested. Many researchers (e.g., Alexander & Dochy, 1995; King & Kitchener, 1994; Perry, 1981; Schommer, 1998; Strange & King, 1981) confirmed that tertiary education influences epistemological development because students' exposure to a variety of educational perspectives in tertiary studies is likely to influence their progress in epistemological beliefs. In light of this argument, one can deduce that these students, despite their exposure to higher education, have encountered hardly any cognitive conflict that results in the reconstruction of naive epistemological beliefs into more sophisticated ways of knowing.

These results also showed that students with naive epistemological beliefs used self-regulated learning strategies less frequently than those with sophisticated beliefs did. This is quite understandable in terms of the meaning of the beliefs dimensions. If a person holds a more naïve belief in the dimension of Control of Knowledge, they would have little interest in hard work or much effort to learn things. This means such students are less likely to apply various learning strategies because they accept that learning ability is endowed at birth. This has been confirmed by the result of this study that the students with naïve beliefs and those with sophisticated beliefs did not significantly differ in their use of rehearsal strategies – a lower or basic order cognitive strategy. This might be due to the fact that it is easy for the students with naïve beliefs to adopt surface learning strategies or lower order cognitive skills such as memorization, rote learning and simple recall in order to help their understanding of the material or knowledge.

The results of this study also indicated that the epistemological beliefs explained 15.8 % of the variance in students' overall use of the strategies considered together and that these beliefs also explained, when considered individually, very little of the variance in students' self-reported use of lower order cognitive strategies and relatively higher variance in their use of higher order cognitive and metacognitive strategies. The significant difference between the two belief groups in their use of other clusters of strategies implies that learners' beliefs affect their practice of self-regulated learning strategies. The variance, as shown in Table 4, is in favor of EFL students with sophisticated epistemological beliefs in four of the five clusters of the EFL learning strategies. Participants with naïve epistemological beliefs are more likely to rely on lower order cognitive strategies such as memorization and rehearsal than higher order ones such as elaboration and critical thinking. Those with sophisticated epistemological beliefs showed a more strategic approach in using higher as well as lower level cognitive strategies according to the requirements of various language learning situations, as their mean scores on all the strategies are higher than those of their counterparts with naïve epistemological beliefs.

The findings of this study confirmed that epistemological beliefs have a significant impact on their use of metacognitive strategies as well. Naïve epistemological beliefs holders showed

less monitoring of their language learning performance, whereas those with sophisticated epistemological beliefs showed more control of their language learning performance. In this regard, findings of the study are consistent with conclusions of other research reports that students holding more sophisticated beliefs use higher order strategies and more strategic processing of knowledge as they do reflect more on how they learn and they have more awareness of what to do to improve their learning (Braton & Stromso, 2005; Donald, 2002; Kardash & Howell, 2000; Olaussen & Braten, 2003; Qian & Alvermann, 2000; Schreiber, 2004; Schreiber, Shinn & Weems, 2003).

Conclusions

Based on the findings of the study, it is possible to draw the conclusion that the EFL students in Bahir Dar university are not that much good at using a variety of language learning strategies. Moreover, these learners have not undergone a series of cognitive conflict which could help them modify their traditionally inherited epistemological beliefs. Learners' epistemological beliefs can influence their choice and application of higher order cognitive and metacognitive learning strategies. The more sophisticated epistemological beliefs one holds, the more likely one adopts a wide range of learning strategies.

Based on these findings and conclusions, instructors in the department and the faculty should attempt to include some awareness raising activities in their respective courses to promote recent conceptions of constructivist approach to learning so that students can develop more sophisticated beliefs about knowledge and learning process, which in turn help them use cognitive and metacognitive strategies better and more frequently. It is also advisable that instructors in the department and the faculty should also consider learner training; i.e., teaching their students how to use and regulate their learning in order to take responsibility for their own learning.

Because of the small size of EFL student population in the university, this study had a limitation in carrying out factor analysis to determine the epistemological belief dimensions in Ethiopian culture and in EFL domain-specific context. Therefore, further research should be conducted by involving a large number of participants from different universities so that factor analysis can be applied to address this limitation.

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