**REPUBLIC OF TURKEY**
**CUKUROVA UNIVERSITY**
**INSTITUTE OF SOCIAL SCIENCES**
**ENGLISH LANGUAGE TEACHING DEPARTMENT**

# AN INVESTIGATION OF THE RELATIONSHIP BETWEEN EPISTEMOLOGICAL AND LANGUAGE LEARNING BELIEFS

**Yavuzcan DERE**

**MASTER OF ARTS**

**ADANA / 2018**

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**MASTER OF ARTS**

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# ÖZET

## EPİSTEMOLOJİK İNANÇLAR İLE DİL ÖĞRENME İNANÇLARI ARASINDAKİ İLİŞKİYE DAİR BİR İNCELEME

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Öğretmen ve öğrencilerin akıllarında sınıfa getirdikleri, 1970'li yıllardan beri öğrenmenin nasıl gerçekleştiğine dair çalışmaların merkezine yerleşmiştir. Diğer inançlar arasından bilgi ve bilmeye dair inançlar, diğer bir deyişle epistemolojik inançlar, büyük bir ilgi toplamıştır. Kişisel epistemoloji kavramının kendisine odaklanan çalışmaların yanı sıra öğrenme stratejileri gibi diğer yapılarla olan ilişkisi geniş ölçüde incelenmiştir. Fakat dil öğrenme inançlarıyla olan ilişkisi incelenmeden kalmış ve çok az çalışma böyle bir ilişkiye odaklanmıştır (örneğin; Mori, 1999). Şimdiki çalışma ilk olarak inançları tek tek ortaya çıkarmaya ve daha sonra iki inanç türü arasındaki ilişkiyi bulmaya çalışmıştır.

Fırat Üniversitesinden kız ve erkek 155 öğrenci çalışmaya katıldı. Çalışma hem nicel hem de nitel bilgi toplama metotlarının kullanımını gerektirdi. İki kısımdan oluşan bir anket ve bir röportaj, öğrencilerin epistemolojik ve dil öğrenme inançları hakkında bilgi toplamak için uygulandı.

İstatistiksel ve içerik analizinin sonuçları öğrencilerin naif ve sofistike epistemolojik inançları olduğunu gösterdi. Ayrıca katılımcıların içgörülü veya zararlı dil inançları vardı. İki inanç türü arasındaki ilişkiye dair inceleme epistemolojik inançlar ile dil öğrenme inançlarının çoğunlukla ilişkisiz olduğunu kanıtladı ki bu epistemolojik inançlarının herhangi bir alandan bağımsızlığına ve dil öğrenme inançlarının alan özgüllüğüne işarettir.

**Anahtar Kelimeler:** Epistemolojik inançlar, dil öğrenme inançları, kişisel epistemoloji, bilgi, bilme

## ABSTRACT

### AN INVESTIGATION OF THE RELATIONSHIP BETWEEN EPISTEMOLOGICAL AND LANGUAGE LEARNING BELIEFS

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What teachers and learners bring into the classroom in their minds has been central to the research about how learning occurs since around 1970s. Among other beliefs, the beliefs about knowledge and knowing, namely epistemological beliefs, have drawn great attention. As well as the research focusing on personal epistemology itself, its relation to other constructs such as learning strategies has been extensively investigated. However, its relation to language learning beliefs has remained relatively unexamined and very few studies have focused on such relationship (e.g. Mori, 1999). The current study attempted to reveal individual beliefs first and examine the relationship between the two types of beliefs.

One hundred fifty-five students of both genders from Fırat University participated in the study. The study involved the use of both quantitative and qualitative methods of data collection. A questionnaire made up of two parts and an interview were conducted to collect data about the students' epistemological and language learning beliefs.

The results of the statistical and content analysis showed that the students possessed both naïve and sophisticated epistemological beliefs. The participants also held insightful and detrimental language learning beliefs. The investigation of the relationship between the two types of beliefs proved that epistemological and language learning beliefs were mostly uncorrelated implying the domain generality of epistemological beliefs and the domain specificity of language learning beliefs.


**Keywords:** Epistemological beliefs, language learning beliefs, personal epistemology, knowledge, knowing

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Yavuzcan DERE

Adana / 2018

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# LIST OF ABBREVIATIONS

**BALLI** **:** Beliefs About Language Learning Inventory

**ESL** **:** English as a Second Language

**CEFR** **:** Common European Framework of Reference

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# CHAPTER 1

# INTRODUCTION

## 1.1. Introduction

This chapter includes statement of the problem, the purpose of the study, the research questions, the importance of the study, and operational definitions.

## 1.2. Statement of the Problem

The study of epistemological beliefs, namely the beliefs about knowledge and learning, has struggled to explain the complex relationship between the beliefs about knowledge and the problems that are expected to arise in educational settings such as poor performance (e.g. Schommer, 1993a), ineffective study strategies (e.g. Schommer & Easter, 2008), misinterpretation of knowledge (e.g. Schommer, 1990), attitudes towards education and languages which do not result in effective learning (e.g. Schommer &Walker, 1997), cultural differences (e.g. Chan & Elliot, 2002), low appreciation of learning (e.g. Paulsen & Feldman, 1999), intellectual, cognitive, and affective difficulties on students' side (e.g. Chan & Elliot, 2004), and misconceptions of teaching on teachers' part (e.g. Chan et al., 2008). Numerous researchers in the field have studied different parts of the mentioned complex relationship and have concluded that epistemological beliefs have significant implications in educational settings and learners' minds (e.g. Schommer et al., 1992; Pajares, 1992; Braten & Stromso, 2005; Cano, 2005; Chan, 2007). Schommer-Aikins (2004), for example, reports that low-level epistemological beliefs result in the likeliness to display a lower level of reflective judgment.

The same phenomena aforementioned occur more or less in every type of educational settings regardless of the discipline in which education occurs. However, language classrooms are one context to which the relationship of epistemological beliefs has not been established well by the previous research conducted about the beliefs of knowledge. Among great researchers, Mori's effort (1999) to understand the relationship between epistemological beliefs and language learning was the first attempt made and seems to remain as the only considerable example. Mori found out that there wasn't significant correlation

between epistemological and language learning beliefs. She stated that lack of correlation could mean that language learning is domain-specific. However, she revealed that there were meaningful connections between epistemological beliefs and language learning achievement. The scarcity of studies researching the relationship in question inspires further research conducted with different instruments in different contexts.

Given the apparent ongoing need for further research upon Mori's (1999) and lack of such research in Turkey, the investigation of the beliefs about knowledge, language learning beliefs and their complex relationship in language classes in Turkey may expand the horizons into the relationship between epistemological beliefs and language learning beliefs. This study is based on this urgent stimulation to contribute to the understanding of the relationship between epistemological and language learning beliefs.

### 1.3. The Purpose of the Study

This study will attempt to enhance understanding of the interaction between epistemological beliefs and language learning (beliefs). To accomplish the purpose, the revelation of beliefs about knowledge and language learning will precede the investigation of a possible relationship between two types of beliefs.

### 1.4. Research Questions

In parallel with the purpose of the study, answers will be searched for the questions below:

1. What are the epistemological beliefs which the language learners in Fırat University in Turkey hold?
2. What are the language learning beliefs these language learners have?
3. What is the relationship between these two types of beliefs? What is the effect of epistemological beliefs on language learning beliefs?

### 1.5. The Importance of the Study

Learners, as human beings, bring a complex system of attitudes, expectations, experiences, beliefs, and strategies into the classroom. Research proves that attitudes with

underlying beliefs and expectations determine the learning process and the outcomes of this complex process. Achievements and experiences also operate around these structures (Bernat & Gvozdenko, 2005).

With the development of BALLI (Beliefs About Language Learning Inventory), Horwitz (1985, 1987) has brought a new perspective to language learning beliefs research. The practical inventory that Horwitz invented has been used by many researchers to capture the beliefs of small and large groups of language learners (e.g. Horwitz, 1988; Kuntz, 1996; Oh, 1996). Even though there have been some individual, contextual and cultural differences among these studies of beliefs, the argument that a better understanding of these beliefs can improve the language learning process and outcomes has been central to beliefs research.

The role of epistemological beliefs in language learning, which could be similar to the centrality of beliefs in general, has remained quite untouched as part of great mass of beliefs research. This role could be identified with the investigation of language learning as a specific domain or it could be explained as an interaction between epistemological beliefs and the variables in language learning process or epistemological beliefs might have a direct or indirect effect on the outcomes of language learning process.

Disclosing epistemological and language learning beliefs individually and inquiring into mutual interaction, this study here will contribute to a better understanding of the abovementioned possible roles of epistemological beliefs in language learning field. Furthermore, the study will enrich the diversity in terms of the context and cultural background in which the beliefs are researched.

From a more practical stance, results collected from such descriptive studies could help instructors establish an effective problem-solution environment as a result of scrutinizing the underlying dynamics or essential features of language learning, which is asking questions about the knowledge and learning itself, rather than probe into popular issues. That is, many issues that we know exist on language learners' part today might stem from fundamental cognitive and metacognitive structures in their minds rather than/ in addition to popular issues which have been at the core of the literature such as intelligence. Clarifying these essentials could help teachers take well-grounded steps against issues in the classroom identifying the actual sources which they originate from. As well as teachers' raised awareness of the

underlying sources, improvements to classroom planning and instruction might be facilitated by a better understanding of the beliefs about knowledge and learning.

## 1.6. Operational Definitions

### 1.6.1. Personal Epistemology

Hofer (2004) defines the term as “a field that examines what individuals believe about how knowing occurs, what counts as knowledge and where it resides, and how knowledge is constructed and evaluated”.

### 1.6.2. Epistemological Beliefs

Epistemological beliefs are the beliefs about the nature of knowledge and knowledge acquisition (Chan, 2007). As a plural noun, it usually refers to a belief system in which several dimensions exist developed by Schommer (1990) in order to explain personal epistemology.

### 1.6.3. Cognitive Equilibrium or Equilibrium

According to Jean Piaget, humans have a desire to maintain a state of cognitive balance or equilibrium. This balance is maintained either assimilating new information into mental structures or accommodating to new information.

### 1.6.4. Self-Efficacy Beliefs

Self-efficacy beliefs are people’s beliefs about their capabilities in relation to a specific task which determines how people think, feel, motivate themselves and behave (Bandura, 1994).

# CHAPTER II

# LITERATURE REVIEW

## 2.1. The Study of Epistemology and Epistemological Beliefs

Epistemology is a branch of philosophy which concerns what knowledge is and how humans justify it. It has been an interest for years how humans acquire knowledge, what beliefs they have as to knowledge, and how personal epistemologies are related to other mental structures.

### 2.1.1. Developmental Approaches

#### 2.1.1.1. Piaget's work as the Initiator

Piaget, in his work around 1950s, has been the initiator of the particular interest in epistemology with the use of the term *genetic epistemology* in order to introduce his theory of development. Campbell (2006) explains Piaget's work in detail. According to Campbell, the main idea of Piaget's work is that it is necessary to know how knowledge is acquired to be able to understand what knowledge is.

Piaget believed that knowledge develops as a biological process by the adaptation of the organism to the environment. He rejected an innatist point of view in that organisms are equipped from birth with the structures facilitating learning. He was also against a cognitive view in which mental structures are interpreted theoretically without any reference to the conditions they occurred in. His views could be called as equilibrium between theoretical and empirical interpretations of knowledge and knowledge acquisition. Empirical interpretation mentioned here best refer to the actions of behavioristic approach, which sees organisms as the passive soldiers of the stimulus-response chain.

As Campbell (2006) appropriately puts forward, Piaget's genetic epistemology would mean *developmental theory of knowledge* rather than a concept related to heredity as it means in today's world. When Piaget's idea that knowledge is a combination of biology and actions is taken into account, it makes sense to interpret the term genetic epistemology as a developmental theory. In Piaget's theory, development occurs as a result of mutual

interaction of cognitive structures and environment by the assimilation and accommodation processes. It is also of importance that Piaget labels knowledge as changing and transforming.

#### 2.1.1.2. Perry's work: The First Focused Attempt for Epistemological Development

Perry, in the early years of 1950s, started two longitudinal studies parallel with Piaget's theory. However, Perry was more interested in the epistemological development of knowledge in college students while studies on infants and children constituted the greater portion of Piaget's work. Piaget also investigated the historical and psychological aspects of the knowledge development whereas Perry was the first to attempt to report individual results of epistemological development.

As a heuristic framework for epistemological beliefs, Perry's study aimed to capture the college students' descriptions of their experiences and transformations. Perry conducted in-depth interviews to reveal the students' different responses to the relativistic environment in the university. At first, Perry and his colleagues expected to attribute the differences to the personality traits of the students, which was a popular line of research at the time. He even designed his instruments with the help of the authoritarian personality research. However, he ended up discovering patterns of responses given by the students at similar stages of their educational journeys. The responses proved personality assumptions wrong and groundless.

Perry gave his instrument to more than 300 students and around 30 of these students were interviewed every year with open-ended questions for an assessment of their intellectual and ethical development. At the end of this first line of research, Perry and his colleagues were able to find nine sequential positions through which the students had passed during their university education. To confirm this new scheme of development, Perry started a second longitudinal study with more than 100 students. Perry (1970) reported similar results in both lines of research supporting the sequential development scheme.

Perry's model involved gradual progress of one's intellectual and ethical views. This development occurred from an absolute view of world towards a more relative understanding. The transitions resulted from Piagetian-type cognitive disequilibrium (Hofer & Pintrich, 1997). As other researchers (Knefelkamp, 1974; Knefelkamp & Slepitza, 1976; Moore, 1991, 1994) contributed to the evolution of the model, the nine positions came to appear in four main sequential groups.

*Dualism,* the first of these groups, includes the first two positions and concerns the dichotomic structure of knowledge. At this stage, the learner has an absolutist view of the world. A piece of information is either right or wrong. Learners perceive themselves as right and others wrong. They expect authorities to know and transfer the truth.

*Multiplicity* is the stage in which individuals begin to accept the third option, which is diversity and uncertainty. Position 3 usually involves the acceptance that there could be knowledge which has not been discovered yet. Position 4, furthermore, relates to either the view that there are no absolute answers in some areas or that absolute answers could never be reached. Respect for the validity of each view develops at this point.

*Contextual Relativism* could be called a milestone in Perry's scheme and includes Position 5 and 6. A relativistic and contextual world view dominates this stage. The need to take a point of view for making meaning is a distinctive feature of the stage. Also, the need for individual commitments emerges in Position 6.

*Commitment within Relativism* is a more qualitative stage rather than a structural one according to Perry (Moore, 2004). The focus shifts from intellectual to ethical development in the last three positions. This focus is turned to responsibilities, engagement, and commitments. Perry's studies, however, did not yield the results as to this stage since college years were early periods in order to identify commitments. Actually, these upper positions have not been empirically demonstrated well as the adult population and the qualitative methods such research requires have not been in the focus of the researchers.

Perry did not attempt to find out the way his theory of epistemological development interacted with student learning. However, Perry (1981) questioned how unlikely it would be for a student not to change the way to acquire knowledge while their beliefs about knowledge itself do not stay stable. Moore (2004) matches the development in Perry's scheme with changes in students' views about the role of the teacher and the student. As one proceeds in Perry's scheme, they will perceive teachers more of a consultant with specific expertise and learners as active meaning-makers.

Perry's work has some limitations (Hofer &Pintrich, 1997). The participants in the study were White male students studying in a single university, Harvard. The researchers who outlined the whole scheme were also the interviewers. It is also worth noting that positions

from 1 through 5 were genuinely related to the epistemological development while the last four positions concerned the ethical progress.

Perry's work, regardless of its limitations, was the first to prove that students' perceptions of their educational experiences resulted from their epistemological development rather than their personality. It has been a framework for the studies to the date which have investigated through epistemological perceptions.

#### 2.1.1.3. Women's Ways of Knowing

One of the limitations of Perry's work was that almost all the participants were males, as mentioned earlier. The emergence of critiques and the pursuit of women's beliefs did not take so long in such a period when the contribution of women's beliefs and values to a description of human experience had recently come to be understood. Clinchy (2002), as an author who has contributed to the model here, states that the model called as *Women's Ways of Knowing* had not been intended to be established as an epistemological development model. The main motive for the study had been to research the ways to modify education system which they perceived as detrimental to intellectual development of the women at the time. However, the responses to the interviews conducted later directed the authors to form a model based on and similar in structure to Perry's framework. Epistemological aspect had turned the foundation for the whole study.

As Clinchy (2002) emphasizes, the focus of this new model was slightly different from Perry's, which had been the guide of the coding process. While Perry was more interested in the knowledge and truth itself, this new model related to women as knowers. In spite of Perry's claim that his framework could be applied to the women's transcripts, Clinchy and the others preferred the responses coming from women. As a result, Belenky, Clinchy, Goldberger, and Tarule (1986) conducted extensive interviews with 135 women coming from different backgrounds. The result was an epistemological development model consisting of five different perspectives through which women perceive the world, knowledge, and authority. The perspectives here were shaped around the notion "voice" whereas Perry built his framework around "views".

In the position of *silence,* women generally feel isolated from the classroom and even the society. They merely listen to the others who they think are more knowledgeable and the

authorities. Clinchy (2002) accurately labels this position as absence of epistemological development as she attributes the existence of the position to troubled conditions such as poverty, isolation, and violence.

*Received Knowledge* is the next position and corresponds to Perry's *dualism.* In this position, knowledge is perceived dualistic. It is either good or bad, true or false, black or white. Accordingly, knowledge is not a product of the knower themselves; it springs from the external authority. This position differs from Silence in that knowledge could be stored and reproduced although active processes such as applying are not involved. Clinchy (2002) associates the knowers in this position with someone who does not know anything about a specific task and merely relies on authority or expertise. In this sense, the readiness to listen to and receive knowledge might appear as a good trait. However, the excessive reliance on the authority, the view of absolute knowledge, and the passive reception of knowledge could be named as the limitations of this particular position.

In the subsequent position *Subjective Knowledge,* knowers rely on themselves rather than an external authority. Truth is subjective and shaped according to intuitions and personal experiences. Knowledge here is based on observations and experiences related to the immediate environment. Inferences are hard to make for subjectivists. Subjectivists also have their own opinions; therefore, they respect other opinions. However, Clinchy (2002) points out that they cannot understand others' opinions even though they acknowledge the existence of their opinions.

Clinchy (2002) explicitly states that receptive knowing and subjectivism are limited since both of them are "uncritical ways of knowing". The knowers in these positions are supposed to develop more effective ways of knowing. A received knower accepts truth from the authority, and a subjectivist accepts truth coming from their heart. Yet, both ignore the power of questioning and suspicion. They do not have the knowledge of procedures which are necessary to produce new ideas or test the existing ones.

The first developed position in the sense mentioned above is *Procedural Knowledge.* Knowledge is not seen as something to be stored or a result of experience anymore. Knowledge acquisition does not happen quickly and requires time. Even though there are no single answers, every interpretation of knowledge is not accepted as valid. Rather, the quality of knowledge is questioned.

Procedural knowledge, according to Belenky et al. (1986), takes two forms, which are called as *Separate Knowing* and *Connected Knowing.* Separate knowing could be well exemplified by critical thinking. A critical approach is followed. The focus is on the testing of the ideas and conviction. It makes sense to exclude the emotions as they might cloud the thoughts. Connected knowing, on the other hand, is related to an acceptance of the ideas rather than taking a critical approach. Establishing empathy is underscored. Thoughts could be formed with the help of the feelings. Clinchy (2002) reminds that both types of knowing involves objectivity yet of different kinds. Separate knowers exclude the persons from the ideas and test the quality of the knowledge. Personal values and emotions are left outside. Connected knowers also do not involve their personal values. However, they adopt the other's perspective instead of standing neutrally.

The last position is *Constructed Knowledge* and it is much like Perry's fifth position. Complexity and ambiguity has great importance in the knower's mind. Constructers have trouble in defining what learning is. They incline to describe a circular process rather than a linear one. According to Belenky et al. (1986), constructed knowledge is somewhat an integration of objective and subjective knowledge. It resembles a mix of separate and connected knowing. Constructers could move along the disciplines and integrate knowledge from many areas. In their minds, opposing sides complement and interact with each other such as feelings and reason cooperation.

This model on the women's ways of knowing has its limitations. The gender-related critiques towards Perry's work are true for the model here as well. Furthermore, the different interview procedures conducted with two different populations might have affected the way the responses were given. Despite the limitations of the model, Belenky et al. (1986) made great contribution to the field since they provided an extension of Perry's work taking the women's responses into account. Their work has been commonly utilized by the educators to enhance the education of women (Hofer & Pintrich, 1997).

#### 2.1.1.4. Epistemological Reflection Model

Perry studied males while Belenky et al. worked on females. Belenky et al. implied the existence of gender-related patterns while reporting the results of their model. Seeing the gap, which is the absence of epistemological research with both genders, and getting curious

about the results of Perry's and Belenky et al.'s works, Baxter Magolda started a longitudinal study on epistemological development of 101 students in both genders in 1986. Her research on the development of assumptions about the nature, limits, and certainty of knowledge bore its fruits in 1992 with the development of Epistemological Reflection Model.

The assumptions of social constructivism as to the active construction of knowledge and the development of knowledge as a result of cognitive equilibrium became a guide for Magolda's work (Magolda, 2002). Magolda also reminds that Perry's work has established the basis for her work on epistemological development of college students while Belenky et al.'s work (1986) inspired her work to take gender as a central dimension. Their remarks on the self affected Magolda's research as well. Seeing epistemological development as social, dependent on context, and changing, Magolda had to use qualitative ways of inquiry to truly capture the complex notion in hand.

Magolda's study involved the students' being annually interviewed during college and post college years. Out of 101 students who participated in the beginning, only 39 participants continued at the twelfth year of the study. The gender distribution was balanced with 20 women and 19 men. During the college interviews, the students were asked to freely speak out their opinions about the role of learners, instructors and peers as learners, how they perceive the evaluation of their work, the nature of knowledge, and decision making. The Measure of Epistemological Reflection (MER), which was designed by Magolda and Porterfield in 1988, was also given to the students as an alternative method to collect data. After the college years, the interviews became more of a conversation about the important experiences in the participants' lives, the way these experiences affect the participants, the factors influencing these experiences, their beliefs and sense of themselves (Magolda, 2002).

According to the Epistemological Reflection Model, the first stage of the epistemological development is *Absolute Knowing.* In this stage, learners are interested in the memorization of the facts. Knowledge is perceived as certain and it is believed that authorities know the truth. Absolute knowers believe that teachers should convey knowledge to learners effectively and make sure they understand. Students are supposed to receive knowledge from teachers. Peers could contribute sharing and explaining their knowledge. Lastly, evaluation is believed to demonstrate to teachers that learners have obtained knowledge. Two gender-related patterns also were identified by Magolda. These two different styles concerned

preferences of different genders about knowledge acquisition. Women showed the *receiving* pattern more often, which involves note-taking and listening carefully. On the other hand, men followed the *mastery* pattern, which requires to be engaged attentively in order to remember better.

*Transitional Knowing* is the next stage in the model. In this stage, learners begin to think knowledge is still certain in some areas such as science, but it becomes uncertain in certain areas such as humanities. Memorization leaves its place to understanding. Teachers are expected to present different interpretations. Students suppose their peers to help with new interpretations of the subject. Students also acknowledge that authorities cannot know everything. Two gender-related patterns emerged again. *Interpersonal* pattern, which was identified mainly in women, was related to sharing views and enjoying uncertainty. *Impersonal* pattern in men, on the other hand, involved defending views and overcoming the challenge of uncertainty.

The third stage is *Independent Knowing* in this model. During this stage, students start to comprehend that knowledge is relative and everyone has their own truth. Their focus turns to independent thinking. Teachers are supposed to support this kind of thinking, not judge. Peers help with the extension of the possible truths. Individual thoughts become equally valid with the authorities'. Two gender-related patterns were found in this stage as well. *Interindividual* knowers, chiefly women, tended to accept others' views easier but had trouble forming their own due to the patterns they belonged to previously (the receiving and interpersonal patterns). *Individual* knowers, often men, had trouble seeing and understanding others' views but had developed their ideas because of the patterns they had fallen under in the previous stages (mastery and intrapersonal patterns). Independent knowing became more common in post college years most probably since graduation freed the students from depending on the school and the teachers.

In the next stage, *contextual knowing,* the participants realized that not all the views or solutions were equally valid. What is ideal depends on the context. Knowers need to integrate and apply their knowledge in certain contexts. Expertise is evaluated. Knowledge is constantly constructed as the contexts and evidence change. The use of contextual knowing was rare in college years. Furthermore, the use of such complex knowing was so hard that many knowers learned to utilize it simply watching others do it. The patterns related to

genders start disappearing here as knowing, at such a complex level, requires an integration of all types of patterns mentioned before.

The use of the students from one institution, mostly White and middle-class, is the main limitation of this model. However, Magolda's work transcended single-sex studies providing a detailed description of epistemological development in both women and men. Magolda's model also seems to suggest many implications for classrooms eliciting the perceptions on the role of educational elements.

#### 2.1.1.5. Reflective Judgment Model

Kitchener (1983) suggested a three-level model of cognitive processing to explain the monitoring process which is activated when adolescents or adults experience ill-structured problems. Ill-structured problems are the situations which people get baffled by when encountered and require making judgments based on evidence and reasoning. In the first level of the model, *cognition,* individuals are engaged in simple tasks such as reading and memorization. The monitoring of these tasks happens at another level of cognitive processing, which is the second level *metacognition.* In the third level, *epistemic cognition*, the epistemic nature of problems is questioned. Individuals seek answers to the questions such as whether they can come up with certain solutions or what type of a problem they are dealing with (King & Kitchener, 2004).

King and Kitchener (1994), after fifteen years of extensive interviews about epistemic cognition with individuals from high school students through adults, developed the Reflective Judgment Model. The name "Reflective Judgment" originated from Dewey's work (1933, 1938) which suggests that reflective thinking comes into play when individuals realize the existence of the problems which cannot be solved with certainty. The focus of the interviews was four ill-structured problems. The participants were asked to tell and justify their opinions and respond to additional questions revealing their assumptions about knowledge and how it is acquired.

Their model is a seven-stage developmental model that accounts for the ways individuals comprehend the process of knowing and how the justification of their beliefs about ill-structured problems develop. For summary purposes, these seven stages are expressed in

three main periods: *Pre-reflective* (Stages 1-3), *Quasi-reflective* (Stages 4 and 5), and *Reflective* (Stages 6 and 7).

During Stage 1 in pre-reflective period, knowledge is absolute and certain and direct observation provides knowledge. No justification is required as what is known is equivalent to what is seen. In Stage 2, knowledge is still believed to be certain but it is possible to obtain it indirectly. Authorities are now an alternative to individuals' senses. The justification of knowledge could be made checking out its agreement with the beliefs of authorities. Stage 3 introduces uncertainty but in temporary fashion. Uncertainty disappears as soon as absolute knowledge is obtained. Knowledge comes from authorities. The justification of certain knowledge is referred to authorities while uncertain knowledge is justified as personal opinions.

During Stage 4 in quasi-reflective period, knowledge becomes uncertain. Knowledge is seen peculiar to individuals. The justification of knowledge is made according to evidence and reasoning. It is recognized; however, individuals could manipulate the evidence and give reasons in order to match their existing beliefs. In Stage 5, knowledge is perceived contextually and subjectively. The justification of beliefs is made within the particular context. The evidence and arguments could be blended in individuals' minds at this stage.

Reflective thinking emerges in Stages 6 and 7. In Stage 6, knowledge is shaped as conclusions in individuals' minds drawn from various sources. Authority knowledge is referred only after a critical evaluation. The justification of beliefs is based on conclusions drawn from different contexts and perspectives and critically evaluated solutions. Stage 7 is the final stage and is notable for evaluation of evidence to be more or the most reasonable. Beliefs are justified by an evaluation of conclusions drawn about an issue to be complete, reasonable, and explanatory. It is worth noting that all conclusions are subject to revaluation.

King and Kitchener applied Flavell's (1971) criteria to their model and decided it was a developmental stage model since the stages have an elemental organization, differ qualitatively, and follow a relatively firm sequence. The transition between stages happens similar to the one in Piaget's theory: by assimilation and accommodation.

Their longitudinal study demonstrated that reflective thinking became more evident as the time passed and school achievement and attendance were related to higher reflective judgment. It was also revealed that the greatest difference in stages emerged after graduation,

especially at the doctoral level. Even though there was no significant difference in terms of different genders, King and Kitchener found that men scored higher in two testing periods. Yet, they supposed that men's high scores could be due to their attainment in post-graduate studies.

Critical thinking is one construct close to reflective judgment. Both structures take their places under the broad field of intellectual development. However, King and Kitchener (1994) differentiates the structures by the assumption that critical thinking deals with well-structured problems while reflective judgment is related to ill-structured problems. King and Kitchener (2004) also reminds that Jensen's (1998) study on need for cognition and reflective judgment suggests that the tendency to engage in intellectual endeavors may lead to more advanced epistemic assumptions.

As to educational significance of the reflective judgment model, King and Kitchener (2004) states that students' improvement in reasoning has major importance as they, in their adulthood, need to make informed decisions about their own lives and the whole community. Their studies demonstrated that many students do not reach the desired level of reflective judgment by the time they graduate from the school. That is, school instruction could be supported by the additional strategies which help students improve their epistemic cognition. King and Kitchener (2004) idealizes an educational setting where instructors show respect for students' assumptions, include ill-structured problems in the educational activities, teach students to use data efficiently, give place to uncertainty, and help students practice reasoning skills. However, they warn that their study might have undervalued the cognitive strength of the students as they were given difficult tasks in limited time.

According to Hofer and Pintrich (1997), King and Kitchener's model (1994) had been the most extensive developmental epistemology scheme. The model is outstanding in demonstrating the upper levels of Perry's scheme. Educators who wish to reach an outcome which is similar to the one defined as "reflective judgment" in the model could benefit from the implications of the study. However, there are certain limitations to the model as well. First of all, epistemological beliefs do not get activated by only ill-structured problems. Second, the population is made up of White college students, so more knowledge on other populations is required. Last but not least, hypothetical problems which the students were

presented with may not be a good reflection of real-life problems and students' reactions may differ from the interviews (Hofer &Pintrich, 1997).

#### 2.1.1.6. Argumentative Reasoning

Kuhn (1991) was interested in argumentative reasoning as a tool individuals use to respond to everyday problems. Her primary purpose was to understand how argumentative thinking works but her study yielded results about knowledge while investigating through the details of reasoning.

What makes Kuhn's work remarkable is her broad sample which was comprised of teens, individuals in their 20s, 40s, and 60s. Furthermore, the numbers of males and females were even. The participants were interviewed twice and were asked about three social problems, which were prisoners' going back to the prisons, children's failure in school, and the reason of unemployment. The participants were asked to state and justify their views, offer a counter-argument against their view, and propose a solution for the problems.

Kuhn (1991) states that she identified underlying epistemological perspectives for argumentative reasoning. These perspectives were about the testing of the truth, the questioning of the authority, the possibility of different viewpoints, origins of the beliefs, and the certainty of knowledge. Among these perspectives, only the questioning of the expertise showed a developmental scheme.

Kuhn (1991) reported three categories of epistemological development: absolutist, multiplist, and evaluative. For *absolutists*, knowledge is certain and absolute. Facts and expertise form the basis for knowing. Absolutists sound certain about their beliefs. *Multiplists* usually question the information which originates from expertise. A strong form of subjectivity is embraced and ideas and emotions become more significant than facts as the reliance on expertise has been abandoned. All the views are treated equally and the ideas of expertise are not perceived as more valuable than one's views. *Evaluative* epistemologists also defend uncertainty; however, they acknowledge the possible superiority of expertise. The views are to be compared and evaluated rather than subjectively defended. The interchange of the ideas with the ones holding opposing views and reconstruction of personal theories are tolerated (Hofer & Pintrich, 1997).

It is noteworthy that only 13 students showed evaluative views in the study. As the other researchers had pointed out, Kuhn (1991) also reported a meaningful relationship between educational background and epistemological perspectives. Another relationship found in Kuhn's study is the connection that evaluative epistemologists were more likely to exhibit skills of argument. It could be due to the fact that the level brings about an understanding of arguments and the need for a comparison and evaluation of conflicting views.

Kuhn (1991) has contributed to the field of epistemological beliefs by not proposing a developmental epistemological model but connecting epistemology to argumentative reasoning. Even though her findings are not empirically well-established, theoretical similarity of her study to Perry's scheme makes its contribution more valuable. Broad age range of the participants and the problems taken from everyday situations are the strengths of the study. Some limitations exist as to Kuhn's study procedures and findings. It was not well explained what elements the epistemological theories were comprised of. Expertise was claimed to be the only element on which epistemological development categories were built. However, responses both from certainty and expertise were presented as illustrations of the three levels (Hofer & Pintrich, 1997).

### 2.1.2. Multidimensional System of Epistemological Beliefs

#### 2.1.2.1. An Alternative Framework to Perry's

The validity and impact of Perry's pioneer work lasted for around 20 years and his great study shaped the ideas of many authors. As the subsequent studies probed into the complex nature of the study of personal epistemology, much knowledge on the field accumulated (e.g. Knefelkamp & Slepitza, 1976; Ryan 1984; Glenberg & Epstein, 1987). In this accumulation of knowledge, it became easier to see the patterns and contradictions. Marlene Schommer (1990) noticed the contradictions and inadequacies in the existing literature and suggested a fresh framework to explain the nature of knowledge and how it is acquired. According to this newer type of explanation, personal epistemology is a multidimensional belief system. The epistemological belief system is comprised of several more or less independent dimensions. She initially hypothesized the existence of five different dimensions: the structure, certainty, and source of knowledge, and the control and speed of knowledge acquisition. She based her theoretical assumption on several studies. She adopted the dimensions of structure, certainty,

and source from Perry's work. The control of knowledge acquisition was derived from Dweck's research (Dweck & Leggett, 1988) where it has been found that some students believe in fixed intelligence while others think intelligence can be improved. The speed of knowledge acquisition was established on Schoenfeld's research (1983, 1985) where the students seemed to believe in quick learning. They believed that they cannot ever learn unless they do it quickly.

A preliminary study was conducted by Schommer (1988). In this exploratory study, Schommer first assessed the students' epistemological beliefs with a questionnaire. Then, the students read a passage and wrote a conclusion for it. When their responses to the questionnaire were compared to the conclusions they wrote, it was found that the more the students believed in quick, all-or-none learning, the less likely they were to integrate preceding ideas in the concluding paragraph. Also, the more the students believed in certainty, the more they expected a resolvable conclusion. Schommer (1990) interprets these results that the new conceptualization of personal epistemology as a system of independent dimension is plausible as different dimensions prove to have different effects.

Schommer's main study reported in 1990 included two different experiments. In the first experiment, she aimed to strengthen the foundation of epistemological beliefs. Accordingly, a bigger and more diverse sample was selected. 266 students from both junior college and university were selected as the participants. The gender distribution was approximately even. The participants were distributed a vocabulary test, an epistemological questionnaire, and a survey about the characteristics of the students. The epistemological questionnaire was a modified version of the one used in the preliminary study. It contained five hypothesized dimensions likewise. Each dimension was based on two opposing statements, one of which being a naïve viewpoint of the matter, and the other being sophisticated. That is, the students' responses on the one side of a traditional Likert scale were called "naïve" while the responses on the other side of the scale were labeled as "complicated". To present a brief description of each dimension, it is a good idea to indicate the underlying statements in the form of questions which imply the opposing sides. For the dimension "Simple Knowledge", the question is "Is knowledge simple or complex?" For the dimension "Certain Knowledge", the question would be "Is knowledge certain or tentative?" For the dimension "Omniscient Authority", the question is "Does knowledge stem from authority or reason?" For the

dimension “Innate Ability”, the question is “Is learning ability innate or acquired through lifetime?” For the dimension “Quick Learning”, the question would be “Does learning happen quickly, in all-or-none manner or require time?” The response of an individual who approaches all the dimensions naively would be “Knowledge is simple, certain, stems from authority, and learning ability comes from birth with learning itself being quick”. Schommer was of the idea that the dimensions also had subsets that inquire different parts of the dimensions and therefore divided five dimensions in 12 subsets. Subsequently, these 12 dimensions were factor analyzed to see how many and what factors they would form. The results of factor analysis demonstrated that 12 subsets belonged under four factors, not five as hypothesized. The dimension “Omniscient Authority” was not part of the system according to the results. As for the characteristics survey, Schommer aimed to explore the factors that might have an effect on the forming of epistemological beliefs. With that purpose in mind, she gave the students a survey which elicited information on their families, their obedience to rules, and their motivation towards independence. Then, she compared the results of the survey to four epistemological dimensions and she found some correlations. One which is noteworthy is that the more classes the students attended and completed in higher education, the more likely they were to believe in the uncertainty of knowledge.

In the second experiment, Schommer wished to examine the relationship between epistemological beliefs and comprehension. The investigation of comprehension was made by asking the students to read a passage, draw conclusions, fill in a mastery test, and state their perceptions of their own comprehension. Isolation of epistemological beliefs as the only predictor and generalization of the results across different domains were also Schommer’s concerns. 86 junior college students who also participated in the first experiment were given either a psychology passage or a nutrition passage. The psychology passage had a resolution which required the integration of four theories expressed throughout the passage. The nutrition passage, on the other hand, was about the uncertain findings on the topic “vitamins”. After reading the passage, the students were asked to write a conclusion for the passages. Ten comprehension questions followed the written conclusions for measuring the recognition of main ideas. Subsequently, the students were asked to note the classes they have taken relevant to the domain the passages belonged to so the prior knowledge could be compared to the results. Lastly, the students were asked to state their confidence in understanding the

passage. In the analysis part of the experiment, the conclusions which the students wrote were evaluated on a scale in terms of both complexity and certainty. The conclusions that the students who presented a single view or none had written were classified as simple. The conclusions which integrated the main points were complex. The belief in the existence of solution at present or in the future determined whether the conclusions were certain or uncertain. The results showed that the belief in quick learning was related to simple conclusions. Also, the more the students believed in certain knowledge, the more likely they were to write certain conclusions. Prior knowledge also predicted certain conclusions. The more classes they had taken, the more they believed in tentative knowledge. The analyses did yield results generalizable for both domains, psychology and nutrition. The results of the comparison between epistemological beliefs and the mastery test in which the students answered ten comprehension questions showed that the belief in quick learning resulted in poor performance on the psychology mastery test. This finding implies epistemological beliefs might affect performance in such classroom tasks. Lastly, the perceived comprehension was compared to the students' actual comprehension and the belief in quick learning brought about an overestimation of comprehension of the passage.

Schommer' study (1990) was significant as it suggested that personal epistemology is a system of beliefs, that these beliefs have specific effects on other constructs such as comprehension, that these beliefs are affected by variables such as educational background, and that the effects of epistemological beliefs on other constructs are generalizable across different domains.

In her subsequent review, Schommer (1994) explained in more details and with more practical experience the features of her new framework. The most fundamental explanation in this review is her statement that epistemological beliefs are made up of more or less independent dimensions and by more or less independent she means that individuals might not be naïve or sophisticated in all the dimensions simultaneously. Epistemological beliefs do not naturally develop in synchrony. Furthermore, it affects learning process whether individuals have naïve or sophisticated beliefs in one dimension. For example, one who believes in simple knowledge could make use of memorization more often.

A remarkable refinement in her understanding of epistemological beliefs was the change in the perception of the dimensions. In her initial study, Schommer (1990) conceived

individuals' growth as a single point on a continuum for each dimension. However, Schommer (1994), in her review, claimed that epistemological dimensions could be better represented as frequency distributions. That is, sophisticated learners might believe only a small portion of knowledge is simple while naïve learners perceive a great amount of knowledge as simple. She reminds that research is needed to test this conceptualization of epistemological dimensions.

In her review, Schommer (1994) also touched on the factors which influence epistemological beliefs. Classroom education is the most relevant factor to educational purposes. Schommer reminds that there is an ongoing effect of past educational philosophies which assume knowledge is simple, certain, and learned quickly especially in the areas such as science and mathematics. Two types of instruction exist in the classrooms: the instruction which promotes naïve beliefs and the one promoting sophisticated beliefs. Upon reflection on past studies, Schommer (1994) could suggest instructional guidelines which foster sophisticated beliefs and better learning. These guidelines state that teaching should be so that students must perceive learning as active construction of knowledge on individual basis. Higher level learning is supposed to be seen as a difficult task and students need to understand that failures are actually challenges which one must overcome. Teachers could provide the students with complex problems that take time and effort. Schommer (1994) makes an interesting suggestion based on the interviews in her previous research that learning is seen as more important and worthy when students feel as if their teachers care more about their learning than earn money. Another suggestion is to teach in a manner that allows students to make connections between what they learn and what they experience in real-life. If students need to apply the knowledge in different contexts, they might understand the contextual and changing nature of knowledge. Schommer represented home education and cultural effects as a second factor. Reviewing past studies, Schommer (1994) noticed the existence of situations where home education does not match with classroom education and this leads to confusion in learners' minds. For example, if the students who value group work engage in an education system in which individual achievement is perceived as the way of learning, the students will get stuck between opposing practices. Schommer (1994) speaks about a study she had conducted to reveal the effects of factors from outside the classroom (Schommer, 1993b). The results showed that the older the students were, the less likely they were to

believe in quick learning and innate ability. Furthermore, the more educated they were, the less likely they were to believe in simple and certain knowledge. These results emphasized that beliefs about learning were shaped by home life while beliefs on knowledge itself were influenced by educational experience.

At the end of her review, Schommer (1994) reports that the effects of education and culture on epistemological beliefs exist but it needs more research to understand how these ends interact with each other. She adds that epistemological beliefs play a crucial role in educational settings and the unknown should be revealed to provide students with a more efficient learning environment.

In 2002, Schommer-Aikins first began mentioning the importance of epistemological beliefs in her paper explaining her recent reflections on epistemological beliefs. She stated that the study of epistemological beliefs brings about understanding the learner's perspective and this understanding gains importance when learning does not occur as it is expected. Schommer-Aikins also reminds other researchers of the fact that the main purpose of such study is to understand learners, and help them learn better. In her description of an epistemological beliefs system, she emphasized that the multiplicity of beliefs, how generalizable they are and how independent each dimension is will vary according to time and contexts. It would wise to avoid making firm assumptions as variation makes it difficult to specify the standards.

In her review (2002), another question that she answers is the reason why dimensions are needed in epistemological research. Theoretically, it is obvious that the different dimensions of epistemological beliefs move independently at certain times in one's life. From a practical view, the dimensionality of the beliefs allows for a more detailed description of students' beliefs facilitating teachers' job of creating a more appropriate educational environment. She also adds that dimensionality becomes more apparent as individuals grow up and are influenced by their social environment. Schommer-Aikins likens the independence of dimensions to the generalizability of beliefs across different domains in that domain specificity of epistemological beliefs will vary according to time and contexts. Domain specificity might become more obvious in later years of the life. Domain general beliefs could become the core beliefs in personal epistemology and domain specific beliefs arise from this

core. Schommer draws attention to the development of epistemological beliefs stating that the development of these beliefs will probably last to the end of the life.

Sophistication of epistemological beliefs is another issue Schommer-Aikins (2002) elaborated on. She explains that the quality of study strategies, problem solving, comprehension, and interpretation is the criterion for determining the sophistication level of epistemological beliefs. These qualities had been the main focus of previous research. The sophisticated learner will be flexible about new ideas; however, the core concepts will stay stable. This core keeps an individual away from insanity, suicidal tendency, and skepticism.

At the end of her review (2002), Schommer-Aikins reminds that there were some questions to be answered in future research. These questions mainly inquired whether learning beliefs lead to knowledge beliefs or vice versa, whether epistemological beliefs could be applied across different cultures, and how combinations of beliefs affect learning.

Schommer-Aikins' framework contributed a fresh insight into the field of personal epistemology. She was the first to find the term "beliefs" to describe epistemology, to identify distinct beliefs, to add learning beliefs, to suggest asynchronous development of beliefs and the theme of balance which assumes that extreme epistemological beliefs may be problematic, and to introduce a quantitative tool for assessing epistemological beliefs. The epistemological belief research which Schommer-Aikins introduced allows for both easier identification of epistemological beliefs and a clearer construction of connections between beliefs and learning with the help of group data and statistical analyses (Schommer-Aikins, 2004). Although Schommer worked on embedding the epistemological belief system into a more complex system, the summary of her framework mentioned so far explains the core of an epistemological belief system.

### 2.1.3. The Relationship of Epistemological Beliefs to Other Constructs

Many studies have investigated the relationship between epistemological beliefs and learning after Schommer (1990) published her paper suggesting the use of a new framework. As the concept "learning" is a vast field composed of many ingredients and hard to investigate thoroughly, researchers have studied this relationship as between epistemological beliefs and parts of learning. The most popular constructs related to learning that have been studied so far have been motivation, academic performance, metacognition, reflective

judgment, conceptions of learning and teaching, study and learning strategies, attitudes towards education, demographic background, gifted students, conceptual change, self-efficacy, academic and everyday problem-solving, and culture. The results of main studies having been conducted on these constructs will be briefly mentioned here.

Paulsen and Feldman (1999) studied "motivation" and found out that the belief in simple knowledge predicted a less likeliness to have intrinsic motivation, an appreciation of learning tasks, and positive feelings towards their capacity. The belief in quick learning also brought about less likeliness to have intrinsic motivation and an appreciation of learning tasks. The students who believed in innate ability showed extrinsic motivation, low appreciation of learning tasks, and negative feelings about self-capacity. In another study on motivation, Paulsen and Feldman (2005) reported that the students with more sophisticated beliefs were more likely to use productive motivational strategies.

Schommer (1993a) studied "academic performance" on high school students and reported that the less the students believed in quick learning, simple knowledge, certain knowledge, and fixed ability, the better they performed academically. However, she warns that only quick learning predicted academic performance after general intelligence was added to the analyses. In another study with middle school students, Schommer-Aikins, Duell, and Hutter (2005) reported that epistemological beliefs appear to affect mathematical performance and overall academic performance. Their study also revealed that general epistemological beliefs may affect academic "problem-solving".

Bromme, Pieschl, and Stahl (2010) studied "metacognition" and found that the inclusion of epistemological beliefs significantly affected the way the students perceived classroom tasks. However, their study also demonstrated that epistemological beliefs might stay only as perceptions since other factors affect the students' actions based upon their perceptions.

Bendixen, Dunkle, and Schraw (1994) investigated through "reflective judgment" in college undergraduates and graduate students and reported that the belief in quick learning, fixed ability, and simple knowledge accurately predicted lower level of reflective judgment. They also found that the dimension "Fixed Ability" best discriminated among the different levels of epistemological reasoning.

As for "conceptions of teaching", Pajares (1992) stated that the research on epistemological beliefs of pre-service teachers may reveal how they perceive the teacher

education programs and the beliefs affect teachers' cognitive and affective outcomes (p.328). Chan and Elliot (2004), in an attempt to reach where Pajares guided to, studied "conceptions of teaching and learning" and reported that the belief in innate ability, authority knowledge, and certain knowledge were related to *Traditional Teaching* conception in which knowledge is handed down by teachers and students are passive receivers. They also found a correlation between the dimension "Learning Effort" and *Constructivist Teaching.* They concluded that epistemological beliefs are possibly related to the conceptions of teaching and learning. Chan (2007) presented a detailed description of the relationship between epistemological beliefs and conceptions of learning. He stated that the belief in authority knowledge predicted the absence of learning for creative purposes. The belief in learning effort was related to all the conceptions in question and this implied that epistemological beliefs strongly affect the conceptions. The belief in innate ability was negatively correlated with learning conceptions which perceive learning as changing perception, bringing personal growth, and developing social competence. The students who believed in certain knowledge perceived learning as accumulation of knowledge, remembering and reproducing, and comprehension of knowledge. The same study by Chan (2007) also studied "learning strategies and reported the results that the belief in authority knowledge, certain knowledge, and innate ability was related to lower level learning strategies while the belief in learning effort was related to higher level strategies. Furthermore, the belief in innate ability was found to be negatively correlated with higher level strategies. In 2013, Metallidou, in the study of learning strategies of middle school students, found out that epistemological beliefs strongly affected the use of learning strategies. Schommer-Aikins and Easter (2008) also reported the existence of meaningful relationships between epistemological beliefs and study strategies.

In 1997, Schommer and Walker studied "the attitudes towards education" with high school students and reported that the less the students believed in fixed ability and quick learning, the more they appreciated education and enjoyed school time. In 1993b, Schommer investigated through "the demographic background" and reported that the education level of parents and their support for independent decision making was negatively correlated with the belief in simple knowledge. Also, the education level of parents and the duration of school time were negatively correlated with the belief in quick learning. Female students were less likely to believe in quick learning.

Schommer and Dunnell (1994) compared the “gifted high school students” to “non-gifted high-school students” to test whether any difference exists. The results showed that gifted students were less likely to believe in simple knowledge. It is also interesting that gifted students changed their beliefs while non-gifted students’ beliefs tended to remain identical. Near the end of the high school, gifted students were less likely to believe in quick learning than non-gifted students. No differences were found about the belief in certain knowledge.

Qian and Alvermann (1995) investigated through the relationship between epistemological beliefs and “conceptual change learning”. They concluded that the students who have naïve epistemological beliefs were less likely to succeed in conceptual change learning. They also found that the belief in certain and simple knowledge was the most salient dimension in conceptual change learning.

Yilmaz-Tuzun and Topcu (2008) attempted to find out the relationship between the epistemological beliefs and self-efficacy beliefs of pre-service teachers. After conducting multiple regression analysis, they only found significant relationship between the dimension Innate Ability and self-efficacy beliefs. The pre-service teachers’ beliefs regarding the existence of innate ability were negatively correlated with their self-efficacy beliefs. That is, the less they believed in innate ability, the more confident they were about their own teaching.

In 2002, Schommer and Hutter studied “everyday problem-solving” and reported that the belief in complex and tentative knowledge predicted the use of multiple perspectives, modification of thinking, cautious judgment and decision-making, and acknowledgement of complexity and tentativeness of everyday issues. They suggest that the inclusion of everyday issues in the curriculum foster the development of epistemological beliefs.

Chan and Elliot (2002) gave an adaptation of Schommer’s questionnaire (1990) to Hong Kong teacher education students to be able to compare the results and to understand the role of “culture”. They reported that different findings imply culture is a significant variable in the study of epistemological beliefs. The cultural values of the society may shape the epistemological beliefs of the individuals of that society.

The common implication of the studies above that have related epistemological beliefs to other various constructs is that epistemological beliefs have a crucial role in most of the variables affecting educational settings. As can be seen, epistemological beliefs are also in an interactional relationship with many variables such as education level.

### 2.1.4. Alternative Frameworks of Personal Epistemology

Alternative frameworks to Perry's (1970) unidimensional and Schommer's (1990) multidimensional works have been naturally suggested in a complex domain such as epistemological beliefs. Hofer and Pintrich (1997) presented an article the first part of which includes a critical and comprehensive review of previous research on epistemological beliefs and the second part of which addresses theoretical and methodological issues in epistemology research. The authors also suggest a theoretical framework of epistemological beliefs called *personal theories.*

Although the research that Hofer and Pintrich (1997) reviewed has already been described in details in this very chapter (see Developmental Approaches and An Alternative Framework to Perry's sections), it is crucial to touch upon Hofer and Pintrich's reflections on Schommer's work (1990) and Schommer-Aikins' feedback (2002) on these reflections. Hofer and Pintrich (1997) suggested that the definition of personal epistemology included only the dimensions about the nature of knowledge. They also stated that two dimensions which are about the nature of learning should not be included in personal epistemology. Schommer-Aikins (2002) responded that Hofer and Pintrich (1997) approached the matter from a philosophical point of view. She reminded that the ultimate goals of the study of epistemological beliefs are to understand learners' perceptions, to guide teachers for better teaching, and to inform other cognitive and affective theories. Therefore, the fact that the beliefs about learning were found in many epistemology studies justifies the inclusion of these beliefs in personal epistemology from a practical viewpoint. From a theoretical viewpoint, epistemological beliefs are significant because they play an important role in other cognitions and affect. Thus, the beliefs about learning meet the requirement. Schommer-Aikins (2002) finds plausible Hofer and Pintrich's idea that the beliefs about learning are the predecessors of the beliefs about knowledge. She adds that the research which had showed the lack of beliefs about the nature of knowledge and the presence of learning beliefs in younger students (e.g. Schommer-Aikins, Mau, Brookhart, & Hutter, 2000) could confirm such relationship. Schommer-Aikins, however, prefers to stay tentative on the issue.

Hofer and Pintrich (1997) criticized the change of person (first, second, and third person) and the varying directness (life in general, science, study strategies) in the original questionnaire invented by Schommer (1990). They were worried that the items do not

represent well the content domain of epistemological beliefs. Schommer-Aikins (2002), in turn, stated that the variations actually helped her capture more out of an ill-structured domain such as epistemological beliefs. She also reminded that it would not make sense to expect the original questionnaire to be the ultimate tool to measure epistemological beliefs.

In the second part of their article, Hofer and Pintrich (1997) spoke about theoretical and methodological issues under nine general titles. It would be useful to shortly describe these nine issues here and reflect on these issues as part of previous research. Hofer and Pintrich (1997) found the definition of the construct "personal epistemology" problematic. In the naming and the range of the construct, there had been discrepancies. *Epistemological development, epistemological assumptions, epistemological attitudes,* and *epistemological beliefs* have been among the most used labels for the construct. Hofer and Pintrich found out that existing research had included the nature of knowledge and the nature of knowing as the core concepts in the range of the construct. The researchers had not been much sure about including beliefs about intelligence, learning, and teaching in the range of the construct. Hofer and Pintrich (1997), as part of their perception of epistemological beliefs as *personal theories,* suggest the limitation of personal epistemology into the nature of knowledge and the nature of knowing. That's how the core of the construct could be better understood.

The second issue Hofer and Pintrich (1997) examined was the dimensionality in epistemological beliefs. The dimensions about peripheral elements such as learning were excluded from their framework *personal theories* and only dimensions common to all the existing epistemological studies were included. Hofer and Pintrich ended up with four dimensions falling under two categories: *certainty and simplicity of knowledge (nature of knowledge)* and *source and justification of knowledge (the nature of knowing).* As mentioned earlier, Hofer and Pintrich (1997) assumed that the beliefs about learning and teaching may be developmental precursors to the core of personal epistemology as children first encounter learning and teaching experiences early in life. The certainty, simplicity, and source of knowledge are identical to Schommer's dimensions "certain knowledge", "simple knowledge", and "omniscient authority". The last dimension "justification of knowledge" is related to how individuals evaluate knowledge claims. The justification could be through the evidence, the help of authorities, and the evaluation of authorities.

The next issue Hofer and Pintrich (1997) presented was the assumptions of the developmental models. Whether the authors called the development of epistemological beliefs as in stages, positions or perspectives, they all assumed the development happened from dualistic view to relativism and then to active construction of knowledge. The underlying problem with these developmental models was their assumption that the development was independent on biological state of the individuals. However, this would be to underestimate the social and contextual end of epistemological beliefs. They emphasized that the results of developmental studies could be the output of Western schooling and culture.

Another issue which Hofer and Pintrich (1997) addressed was the relation of epistemological beliefs to cognitive development, age, and education. They underscored the need for more research to be able to define the upper stages of intellectual development and to relate them to epistemological beliefs. While there had been an apparent relationship between age and education, the point where epistemological development began in the development of an individual had not been clarified. The studies had researched either high school students or college students. Studies that investigate through the transitions from one level of education to another must be conducted for clarification. They also suggested the use of samples out of academic context to understand the effects of sociocultural contexts.

The subsequent issue pronounced in Hofer and Pintrich (1997) was the lack of empirical evidence for explaining the way epistemological beliefs become part of individuals' cognitive structure. Piaget had suggested the cognitive disequilibrium as the initiator of change. Change occurs when internal constructs interact with environmental factors. It was apparent that educational settings in the previous studies had been the environment to trigger the change, yet it should be investigated how this change occurs. Hofer and Pintrich (1997) finds inadequate the disequilibrium idea that some developmental studies had suggested to be the source of the change since the idea does not account for motivational and contextual factors taking place in the process of change. As a source of change, instructional elements in the classroom that foster epistemological development must also be identified.

The domain specificity of epistemological beliefs has been another issue for Hofer and Pintrich (1997). They stated that domain specificity of epistemological beliefs had not received the attention it deserves. This could be due to the assumption that epistemological

beliefs are general beyond the domains. Hofer and Pintrich, referring to Sternberg (1989), clarifies the misunderstanding that domain generality and specificity are perceived contradictory terms while they are actually complementary elements. The need for more research is expressed by the authors as well.

The next issue Hofer and Pintrich (1997) mentioned was the relation of epistemological beliefs to cognition and motivation. They emphasized the possibility that epistemological beliefs explain many cognitive structures such as study strategies, information processing strategies, comprehension, self-regulation, and conceptual change learning. More research is needed to establish well-defined explanations as to the relationships. Hofer and Pintrich were convinced that epistemological beliefs relate to motivation as well. Sophisticated beliefs appeared to predict intrinsic motivation, self-efficacy, and self-regulation. The need for more research was again pronounced.

Another issue Hofer and Pintrich (1997) dealt with was the unknown relationship between epistemological beliefs and gender, ethnicity, and culture. At the time, the studies who have attempted to find out gender differences, ethnic variations, and the impact of different cultures were very scarce. Epistemological beliefs are surely influenced by these elements. Therefore, the need for more research on these elements was among the authors' concerns.

The last but not least issue was the methodological issues in Hofer and Pintrich (1997). The very first problem is the limitation of the responses participants might give by the framework in researchers' mind in a broad area such as epistemological thinking. Furthermore, the use of questionnaires limits the answers to the responses given to the existing statements. The authors state that the use of more naturalistic methods such as observation might help describe better the practical and contextual application of epistemological beliefs. Most studies had studied on particular age groups leading to lack of research across educational settings. Also, more contextual information other than academic context was needed. To conclude their article, Hofer and Pintrich (1997) reminded that a better understanding of epistemological theories and the development of these theories will help understand better teaching and learning processes.

Hammer and Elby (2002) approached personal epistemology from a qualitative stance. They suggested a new understanding of personal epistemology. Their framework was related

to epistemological resources. Their focus was particularly on science, yet they assumed the applicability of their theory on other disciplines as well. Hammer and Elby noticed a lack of description of underlying structures which enable students to gain more sophisticated beliefs. They also criticized the implication that epistemological beliefs are stable and need to move consistently across different contexts.

The first thing Hammer and Elby (2002) criticize about existing explanations of personal epistemology is the use of questionnaires and interviews. They consider that students' responses to such questions may not reflect the core beliefs they have about knowledge and knowing. Their responses might not match with their actual practices in the classroom and life.

The second problem with existing theories is the use of indirect questioning methods. For example, some questionnaires of epistemological beliefs have items such as "I do not like movies that do not have ending". According to Hammer and Elby, relying on such questions for finding out epistemological beliefs is not the best idea since it would be wrong to generalize the beliefs on "movies" across all domains.

The authors' rejection of an idea of epistemological beliefs made up of unitary beliefs led them to a new framework called as *epistemological resources.* Instead of perceiving epistemological beliefs as theories, which are generally applied across domain, Hammer and Elby (2002) interpreted epistemology in terms of something called *phenomenological primitives,* which are smaller and more general structures.

Hammer and Elby (2002) developed epistemological resources which are identical to phenomenological primitives. Epistemological resources are smaller and more general than theories. As they were at the beginning of their research, they identified the epistemological resources peculiar to children. According to the authors, these resources are activated by the requirement of different contexts. The context may activate one resource or two. For the beginning, they found four categories of resources. These categories are given below.

*Resources for Understanding the Nature and Sources of Knowledge*:

1. *Knowledge as Propagated Stuff:* Young children sometimes know something just because someone shared the knowledge with them.

2. *Knowledge as Free Creation:* Young children sometimes say they produced something only by inventing by their own minds (invention also requires the use of previous knowledge).

3. *Knowledge as Fabricated Stuff:* Young children may infer some knowledge from other sources. This type of knowledge could be reached by everyone. The other two examples are "knowledge as inherent" and "knowledge as direct perception". This is not a progress; they are just different resources that could work at the same time.

*Resources for Understanding Epistemological Activities:* This category speaks about resources about how children understand the activities to reach, create and manipulate knowledge (epistemological activities).

1. *Accumulation:* Young children simply retrieve accumulated information of the activity "finding out" when they say that they'll "find out". "Getting information" might be developed from simple examples like "getting the toy".

2. *Formation:* In this case, young children understand what they are doing with knowledge by forming things such as songs, stories and so on (Understanding knowledge by creating something with it).

3. *Checking:* Sometimes children check whether the knowledge is correct such as counting by hand a mathematical problem. Application, Comparing, Sorting, Naming, Counting, and Adding and so on could be other resources (See Collins and Ferguson, 1993). Unlike other epistemological belief theories, this type of resource understanding states that counter-productive behaviors could be due to underuse or overuse of certain resources in certain contexts. Activation of resources can correct the situation, then.

*Resources for Understanding Epistemological Forms:* With the help of previous resources, some resources exist to understand epistemological forms. Stories, Rules, Rule Systems, Facts, Songs, Lists, Pictures, Categories, Statements, Words, Names, Numbers and so on (See Collins and Ferguson, 1993). Instead of asserting a unitary belief such as "knowledge is simple or not", it seems better to say that some resources are activated and some deactivated in that particular survey context.

*Resources for Epistemological Stances*: The stances one can take towards epistemological forms: Belief or Disbeliefs, Doubting, Understanding, Puzzlement, Acceptance. In short, the focus of Hammer and Elby's framework (2002) has been on the

activation of different epistemological resources in different contexts. With the activation of resources, the application of epistemology across all domains appears possible. This possibility makes epistemological resources seem more general than epistemological theories. Their framework is also remarkable with the emphasis put on qualitative methods in researching personal epistemology.

### 2.2. The Study of Language Learning Beliefs

Prior to a review of language learning belief studies, it would be informative to define what "beliefs" are and where they might originate from. Richardson (1996) defined beliefs as "psychologically-held understandings, premises or propositions about the world that are felt to be true" (p.104).

As for the origin of beliefs, Bernat and Gvozdenko (2005) named factors such as *family and home background, cultural background, classroom and social peers, interpretations of prior repetitive experiences,* and *individual differences.* Ellis (2008) also mentioned *past experience* as one element which determines learners' beliefs.

The investigation of the beliefs about language learning was initiated with Horwitz's work which was published in 1988. Horwitz (1988) noticed the existence of the beliefs about language learning in the society and she was concerned about the fact that the learners were supposed to bring these beliefs and myths into the classroom. She knew very well that the beliefs the learners bring into the classroom were very likely to determine their effectiveness for academic performance. Seeing the need for a better understanding of language learning beliefs and the lack of previous research, Horwitz attempted to determine how prevalent the certain beliefs held by learners were among language learners. Her aim was to demonstrate the variety of language learning beliefs to teachers and researchers and to raise awareness of possible consequences of special beliefs about language learning. Accordingly, she designed the inventory BALLI (The Beliefs About Language Learning Inventory) to capture learners' opinions on various issues about language learning. The inventory was given to the first semester language students. The participants were 80 students who learned German, 63 students who learned French, and 98 students who learned Spanish. Various language groups were selected for comparison purposes. The percentages of males and females in the groups were various. The age of the participants ranged from 17 to 38. The results of the study

showed consistency across different language groups. Over 40% of the students believed in language learning in less than two years. Most of the German and Spanish students believed language learning is a matter of translation. A great number of the students were worried about the accuracy of their spoken language. These beliefs were examples of negative assumptions about language learning which were likely to result in undesirable outcomes for the learners. The modification of these beliefs, according to Horwitz, might be possible if students' past experiences are replaced with more constructive ones and the recent experience should be designed to ingrain insightful beliefs in learners as a whole.

In 2001, Peacock used BALLI inventory on trainee ESL teachers in a longitudinal study of three years. Peacock hoped that the mistaken beliefs the trainees initially held would disappear or be replaced by correct ones. The initial beliefs of the trainees were compared to the teachers' and the areas where differences were found had been tracked over three years of the program. Unfortunately, no significant differences over the years were identified. The author was concerned that the mistaken beliefs the trainees held at the end of training program might negatively affect the learners which they would teach in the future. Peacock also states that the resistance of language learning beliefs to change might have been an explanation for the little change the trainees have experienced.

Horwitz (1988) studied learner beliefs under five categories: the difficulty of language learning, aptitude for language learning, the nature of language learning, learning and communication strategies, and motivations and expectations. Wenden (1987) later categorized beliefs into three groups: the use of the language, beliefs relating to learning about the beliefs, and personal factors. The beliefs reported at that period of research were identical.

Benson and Lor (1999) found that learners' conceptions of the learning process influenced learners' beliefs and learning strategies. Their study demonstrated the conceptions of learning belong to a higher level of abstraction than language learning beliefs. The conceptions of learning were categorized under two categories: qualitative (experiential) and quantitative (analytic). Qualitative or quantitative conceptions include beliefs either about languages or the nature of language learning.

Barcelos (2003) placed existing research under three categories of approaches: the normative approach, the metacognitive approach, and the contextual approach. The studies

of the normative approach perceive beliefs as "preconceived notions, myths or misconceptions" (p.12). The use of Likert-type questionnaire is peculiar to the studies which follow the normative approach. Although Horwitz's questionnaire has been the most common tool to be used in the investigation of language learning beliefs, some other researchers have developed their own instruments (e.g. Kuntz, 1996; Cotterall, 1999; Sakui & Gaies, 1999). The metacognitive approach perceives beliefs as part of metacognitive knowledge. The beliefs could be defined as personal truths related to values and accompanied by commitment. The methodology used in this approach involves the content analysis of semi-structured interviews and self-reports. Wenden's studies (1986a, 1986b, 1998, 1999, 2001) contributed greatly to this framework. Lastly, the contextual approach conceives beliefs as contextual and social. The effect of experiences as well as mental processes is taken into account. Therefore, Barcelos (2003) favors the contextual approach focusing on its social aspect. In the contextual approach, the use of various data collection means and a variety of data analysis methods are emphasized (e.g. Allen, 1996; White, 1999; Barcelos, 2000; Kalaja, 2003). Ellis (2008) proposes a fourth approach, which is called *metaphor analysis.* In this approach, an indirect way to identify learner beliefs is utilized and the metaphors used by the students are used to describe their learning (e.g. Ellis, 2002; Kramsch, 2003).

Language learning beliefs has influenced or interacted with many educational elements including the outcomes of the learning process. The results of the studies by Horwitz (1988), Kern (1995), Mantle-Bromley (1995), Samimy and Lee (1997), and Peacock (1999) demonstrated that the students had many mistaken beliefs about how languages are learned and that these mistaken beliefs had negative effects on their learning. Horwitz (1988) also notes that the difference between students' expectations and teachers' practices could lead to negative learning situations and outcomes. Kern also confirmed the notion that the differences between student and teacher beliefs could cause tension in the classroom. Kuntz (1996) reported that the motivation and attitude of a learner is influenced by language learning beliefs. Kern (1995) and Oh (1996) described the way language learning beliefs influenced learning: positive beliefs help learners overcome problems and maintain motivation while negative beliefs might lead to low motivation, frustration, and anxiety. Bernat and Gvozdenko (2005) exemplifies the effects of negative beliefs stating that the belief that language learning is mostly a matter of vocabulary learning will lead to a great

effort spent only on vocabulary. Another example is the low expectations an old person who believes in the superiority of younger individuals in language learning would have as to language learning process. As a brief description of the importance of learner beliefs, Stevick (1980) argues that the success of the learners in language learning process depends less on the materials or teaching techniques and more on what goes on in learners' minds.

With the understanding of how important language learning beliefs are, the instructional practices which support positive beliefs have been under the focus. Horwitz (1999) states that although it is impossible for teachers to adapt teaching practices appropriate for each student, it would be useful for teachers to be aware of how different beliefs lead to different behaviors. Wenden (1986a) points out that the activities which promote students to examine their existing beliefs and their effects on learning should be accommodated for successful learning. Even though many aspects of language learning beliefs have been revealed by previous research, the existing literature is apparently very limited given the crucial role the language learning beliefs plays in language learning process.

### 2.3. The Relationship between Epistemological Beliefs and Language Learning Beliefs

The relationship between epistemological beliefs and many other constructs has been investigated by many researchers (e.g. Schommer et al., 1992; Schommer, 1993a; Schommer; 1998; Chan & Elliot, 2004; Paulsen & Feldman, 2005; Chan, 2007). However, the relationship between epistemological and language learning beliefs has remained relatively intact. The first and only significant attempt, to the researcher's knowledge, has been Mori's study (1999) to determine the interaction between these beliefs. Mori, in her study, used Schommer's questionnaire (1995) to measure the epistemological beliefs of the university students taking a Japanese course in the United States. Schommer's questionnaire measured epistemological beliefs with 40 items in the dimensions Fixed Ability, Simple Knowledge, Quick Learning, Certain Knowledge, and Omniscient Authority. Mori also found six dimensions of language learning beliefs in factor analysis resulting in a forty-two-item questionnaire measuring language beliefs. These dimensions were Kanji (*Chinese characters borrowed or adapted by Japanese*) Is Difficult, Analytic Approach, Risk Taking, Avoid Ambiguity, Japanese Is Easy, and Reliance On L1. Student information was also collected.

In correlational analysis with Schommer's five dimensions and six dimensions of language learning beliefs, no correlation was found among the dimensions meaning two areas are internally multidimensional. No significant correlation was found between two areas, as well. One reasonable correlation was between students' belief in Simple Knowledge and their tendency to Avoid Ambiguity. Another correlation between Dependence on Authority and Reliance on L1 can be demonstrated as a manifestation of general learning beliefs in language learning. Negative correlation existed between the belief in Quick Learning and Risk Taking. That is, the more the students believed learning becomes quick or not at all, the less they were likely to take risks. Significant correlations existed between these dimensions and other constructs such as achievement, expectations, and previous education.

The study demonstrates language learning beliefs are related to achievement. That is, teachers need to take care of students' perceptions. This study and Schommer (1990) shows that advanced knowledge could facilitate changes in beliefs.

## 2.4. Measurement of Epistemological and Language Learning Beliefs

### 2.4.1. Measurement of Epistemological Beliefs

Schommer, in 1990, designed a questionnaire in which 12 subsets were supposed to load on 5 hypothetical factors. However, the subsets ended up loading on 4 factors. Furthermore, the loadings did not correspond well in the subsequent studies to the pattern of loadings Schommer originally hypothesized (Schommer, Crouse, & Rhodes, 1992; Schommer, 1993a; Schommer, Calvert, Gariglietti, & Bajaj, 1997). As variables, the subsets were factor analyzed rather than 63 items, which Hofer and Pintrich (1997) points out to as a lack of empirical demonstration of the internal factor structure of the items.

Jehng (1991) also stated that epistemological beliefs constituted independent dimensions. He developed a questionnaire of fifty-one-item, and Jehng, Johnson, and Anderson (1993) reduced the questionnaire into 34 items with a five-factor model. Similar to Schommer's work, the factor analyzing of the items was never conducted to verify the assignment of the items into the 5 dimensions.

Seeing how practical, plausible, productive, and common Schommer's questionnaire had been and remembering Hofer and Pintrich's (1997) concern related to the use of the questionnaire by other researchers without the factor analysis of the items, Wood and

Kardash (2002) decided to blend Schommer's items with Jehng's items to construct a new questionnaire and investigate through the item-based factor analysis and psychometric properties of this new scale. The new scale with 80 items was given to the participants, and only 38 items remained after the examination of item-total correlations, internal consistency, and factor loadings. These 38 items loaded greater than .35 with minimal overlap (< .25) on five factors.

In 2002, Schraw, Bendixen, and Dunkle developed a different questionnaire called Epistemic Belief Inventory. This new questionnaire had 32 five-point Likert-type items with "1" corresponding to "strongly disagree" and "5" corresponding to "strongly agree". Even though some items were paraphrased from Schommer's, most items were newly written. The questionnaire had five factors constructed based on the ones Schommer expected to explore (1990). Cam, Topcu, Sulun, Guven, and Arabacioglu (2012) attempted to translate the inventory into Turkish and validate it with Turkish pre-service teachers. The translated version was administered to pre-service teachers and three-factor model was found after factor analysis. Simple Knowledge and Omniscient Authority did not load as distinct factors in the study.

### 2.4.2. Measurement of Language Learning Beliefs

Horwitz (1987) describes the process of designing of the BALLI. The items in the inventory resulted from the responses of foreign language and ESL teachers from different cultural backgrounds, both foreign language and ESL learners, and teacher educators from different cultures. The participants were asked to express their own beliefs, other people's beliefs, and their current or former students' beliefs about language learning. Three versions of the inventory were prepared in order to identify the beliefs of foreign language learners, ESL learners, and the foreign language teachers.

As a result, an inventory about language learning beliefs was created. The inventory is made up of five different themes: the difficulty of language learning, aptitude for language learning, the nature of language learning, learning and communication strategies, and motivations and expectations. These five themes were questioned in 34 items. In 2006, Nikitina and Furuoka studied the statistical features of the inventory and concluded that the multidimensionality of the beliefs and the themes Horwitz (1988) were statistically

supported. The study also yielded results which supported Horwitz's choice of themes. The inventory has also been used by many researchers in Turkey with interpretable results (e.g. Tercanlioglu, 2005; Altan, 2006; Büyükyazi, 2010).

# CHAPTER III

# METHODOLOGY

## 3.1. Introduction

This chapter includes the research design, participants, data collection tools and procedures, and data analysis. All decisions about the methodology of this study have been made according to the purpose of the study, which is to reveal epistemological and language learning beliefs of the participants distinctively and ascertain the existence of a theoretical or practical relationship between epistemological and language learning beliefs.

## 3.2. Research Design

Schommer-Aikins (2002) explicitly states that it is convenient to use questionnaires to collect data from large samples. She also emphasizes the superiority of qualitative measures at yielding more detailed results. As a recommendation of methodology, she advocates a combination of quantitative and qualitative measures in order that both the big picture could be seen and the individual nuances could be captured. The design of this study, following these recommendations, involves the use of both quantitative and qualitative measures. As a quantitative measure, a questionnaire made up of two parts was used with the first part measuring epistemological beliefs and the second part measuring language learning beliefs. An interview was also conducted to constitute the qualitative aspect of the study. This study is also an example of descriptive research since it merely defines without any intervention what the participants' beliefs are.

## 3.3. The Participants

One hundred fifty-five students in one-year preparation program of English participated in this study. This preparation program is conducted in Foreign Languages School, Fırat University. Every year, the students who enter the Engineering Faculty of the university have to take and pass this one-year preparation class so as to be prepared to meet the language requirements of their majors. The students complete approximately 900 hours of English instruction taking 30 hours a week.

The study involved a homogeneous group of students with respect to their education background as they all took a nation-wide university entrance exam and were placed in their departments with scores in a certain range. The university obliges the students to be at or reach the level B2 in terms of CEFR (Common European Framework of Reference) to be able to continue their studies in their majors. Therefore, the participants in this study were comprised of the students who took the university's proficiency exam and were found to be under the level B2. Furthermore, the participants had taken approximately nine years of English classes prior to the participation in this study. 31 of the participants were female and the rest were male. The age of the participants varies between 17 and 25. However, gender and age were not considered as variables in the study.

Instead of the students who took English classes in their majors, the students in the preparation year were selected as they were more likely to hold definite beliefs about language learning due to the intensive English instruction which they had been exposed to. It would be plausible to say that convenience sampling was used for selecting the participants as it was convenient to work with the students in the preparation year for the reason abovementioned and all the students who participated in the study were the ones who were present on the day when the study was administered.

### 3.4. Data Collection Tools and Procedures

This study here utilized the thirty-eight-item questionnaire with five-factor model designed by Wood and Kardash (2002) to find out the epistemological beliefs the participants held. The questionnaire investigates through the five dimensions of epistemological beliefs, which elicit information on speed of knowledge acquisition (Item 3, 7, 11, 16, 18, 24, 34, and 38), structure of knowledge (Item 4, 5, 12, 13, 21, 26, 28, 30, 31, 33, and 36), knowledge construction and modification (Item 2, 6, 8, 10, 15, 20, 22, 23, 25, 32, and 37), characteristics of successful students (Item 14, 17, 19, 29, and 35), and attainability of truth (Item 1, 9, and 27). Wood and Kardash (2002) report that low scores in the original questionnaire represent the naïve ideas about epistemological beliefs while high scores reflect the sophisticated ideas. In the current study, however, lower scores represent the sophisticated views about epistemological beliefs in four factors while higher scores reflect a sophisticated stance in the fifth factor "Knowledge Construction and Modification". This difference between the

original scale and the current one stems from the fact that the original scale changed the direction of Likert order in the fifth factor due to its positive wording while this study preferred to keep the directions from “strongly disagree” to “strongly agree” in all the factors to prevent confusion.

As for measurement of language learning beliefs, Horwitz’s BALLI (1987) was selected to be the most appropriate one for the current study. Horwitz’s BALLI consists of 34 items in different five themes which were formed by the interviews with teachers. These five themes were named as the difficulty of language learning (Item 3, 4, 6, 14, 24, and 28), aptitude for language learning (Item 1, 2, 10, 15, 22, 29, 32, 33, and 34), the nature of language learning (Item 5, 8, 11, 16, 20, 25, and 26), learning and communication strategies (Item 7, 9, 12, 13, 17, 18, 19, and 21), and motivations and expectations (Item 23, 27, 30, and 31). The inventory contains items convenient to measure general language learning beliefs. Moreover, its common use by the previous researchers has been a valid reason for its selection. It is a significant remark that the variables in this piece of survey were not factor analyzed by Horwitz. However, the literature on BALLI (e.g. Yang, 1992; Nikitina & Furuoka, 2006) provides empirical and statistical support for Horwitz’s separation into themes and choice of themes.

Following the choice of the questionnaires for the current study, the translation of the questionnaires into Turkish, which is the native language of the participants, was carried out. Three language professionals, who were unaware of the content and the purpose of the study, were requested to translate the items back into English. After back-translation was completed, two professionals from education were asked to revise the items regarding the wording. Subsequently, the survey consisting of epistemological beliefs questionnaire by Wood and Kardash and BALLI by Horwitz (Appendix 1) was distributed to the participants and they were given freedom to use as much time as they needed.

Preceding any further action taken in accordance with the purpose of the study, Cronbach’s alpha was examined to ensure that the scales used were internally consistent and reliable. Streiner (2003) states that if a scale is trying to measure one construct, such as epistemological or language learning beliefs in the current study, the items are needed to measure the whole domain and not any other construct in order to retain content validity. He adds that the items’ measuring the same construct brings about a high correlation between

the items. As this high correlation corresponds to a good internal consistency, it is desirable for researchers to interpret the results of a scale which has high correlations among its items. Cronbach's alpha is a widely-used measure of a good internal consistency. While George and Mallery (2003) admire the alpha values between 0.7 and 1.0, Streiner warns that the values higher than 0.9 could point to redundancy of the items. Furthermore, Cronbach's alpha is sensitive to the number of the items included in a scale.

The interpretation of the reliability analysis in this particular study was made according to the guidelines mentioned above. Table 1 shows the results of the reliability analysis from two scales used in the current study.

Table 1

*Cronbach's Alpha Values for the Scales*

| | Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | Number of Items |
|---|---|---|---|
| Epistemological Beliefs Scale | 0.676 | 0.671 | 38 |
| BALLI | 0.663 | 0.688 | 34 |

As Table 1 indicates, the results from the reliability analysis of two scales are almost satisfactory with the alpha values 0.67 and 0.66 respectively. Similar results were yielded when correlations among items were employed ending in the alpha values 0.67 and 0.68 based on standardized items.

Later, the need to probe into the matter more deeply emerged and interviews were used to collect qualitative data in addition to quantitative data for triangulation purposes. Accordingly, an interview made up of 10 questions was prepared. Ten questions were designed so that five dimensions in epistemological beliefs and five themes in language beliefs would be explained by the students in more details. Ten questions which were asked for further understanding and the dimensions or themes they correspond to are below:

1. Do you think knowledge acquisition is a quick or a gradual process that needs time? (Speed of Knowledge Acquisition)

2. Should learning process be all clear or is it wrong to always expect certainty? Is it waste of time to deal with questions that do not have a clear answer? (Structure of Knowledge)
3. Is knowledge certain and fixed or changing? “The only thing that is certain is uncertainty itself”. Do you think this is true? Why or why not? (Knowledge Construction and Modification)
4. Could we say some are born with ability while some are not? Can effort change things? (Characteristics of Successful Students)
5. Can scientists get to the ultimate truth? Can they find answers to everything? (Attainability of Truth)
6. Can we believe in the things we read? If not, is the problem distrust in the sources? (Attainability of Truth)
7. Can everyone learn a language or do they need to have language aptitude? (The Difficulty of Language Learning / Foreign Language Aptitude)
8. Is learning languages different from other school subjects? How? (The Nature of Language Learning)
9. Are the mistakes acceptable or should they be avoided at all costs when communicating in a foreign language? (Learning and Communication Strategies)
10. For what purpose are you learning English? Would you still learn it if you did not have to? (Motivations and Expectations)

The interview was made with ten students who had voluntarily written their names for communication during the implementation of the questionnaires and the answers to the interview questions were audiotaped. All the data in this study were collected from March through May in the second term of 2016-2017 academic year.

### 3.5. Data Analysis

The first action performed in the process of data analysis was the entering of the students’ responses to the questionnaires into the popular statistics software, SPSS Version 22. Afterwards, frequency tables of the students’ responses to all the items were generated so as to gain a detailed description of the phenomena, which would enable thereafter the interpretation of the scales. During the interpretation of the beliefs individually, scores were

called as either low corresponding to “strongly disagree” and “disagree” or high corresponding to “agree” and “strongly agree”. A similar interpretation of scores was also made for the total mean values of the dimensions in that the scores were called as low or high as they approached “strongly disagree” or “strongly agree” respectively. The percentages under “strongly disagree” and “disagree” or “strongly agree” and “agree” were combined and expressed in order to state whether the participants agreed or disagreed with the statements in the scales. The means of five dimensions in epistemological beliefs scale and five themes in language learning beliefs scale were calculated and the correlation analysis was conducted to verify the existence of positive or negative correlations between two types of the beliefs. Next, regression analysis was performed with the same ten values of mean in order to determine how variation in epistemological beliefs would explain the variation in language learning beliefs.

As for the qualitative analysis, the students’ responses to each interview question were analyzed and categorized. The responses were categorized either into naïve or sophisticated end. The naivety or sophistication of the responses were determined based on their similarity to the information in the quantitative instruments. Subsequently, the responses were counted to be able to derive generalizable results. The data were analyzed many times with time in between for reliability concerns and compared to the related data in quantitative analysis to improve validity.

### 3.6. Ethical Considerations

Permission from the management of Foreign Languages School was granted before any actions related to the study were taken (Appendix 2). Furthermore, prior to all the procedures involved in the study, the participants had been extensively informed about the details of the study and their consent had been taken. The written consent forms had been signed by interviewees as well (Appendix 3).

# CHAPTER IV

# FINDINGS

## 4.1. Introduction

This chapter includes the findings about epistemological beliefs, the findings about language learning beliefs, and the relationship between two types of the beliefs. Percentages expressed in the description of the tables have been rounded to the closest whole number and only the items which express the results in the most general manner have been given as examples when more than one items search for the same aspect. Excerpts taken from interviews were expressed in *italics* for emphasis.

## 4.2. The Findings about Epistemological Beliefs

In the scale used in this study of epistemological beliefs, there are five different dimensions, each measuring different aspects of students' beliefs. Eight items in the first dimension named as "Speed of Knowledge Acquisition" mainly attempt to explore the beliefs about how long it takes to acquire knowledge, whether it is a waste of time to work long on problems, the integration of knowledge, and the structure of knowledge. Low scores on this dimension reflect the idea that learning is complex and gradual. It needs both time and effort. On the other hand, high scores mean that learning process is quick and straight. Someone could learn quickly or they cannot at all.

Table 2 demonstrates the students' responses to the eight items in the first dimension "Speed of Knowledge Acquisition". Item 3, 7, 18, and 24 inquire about beliefs regarding how long it takes to acquire knowledge. As one can understand from the table, between 49% and 81% of the students did not agree that learning is a quick and "all or nothing" process. For example; 81% of the students did not believe that they'll never understand something unless they understand it quickly (Item 24). Seventy-three percent also believed that working on a difficult problem does not only pay off for smart students (Item 16). The integration of new information to the old one was not labeled as "confusing" by the 69% of the students (Item 11). Item 34 and 38 question beliefs about the structure of knowledge. Between 57% and 84% of the students were against the opinion that knowledge is certain. For instance; 84% of

the students did not think that the information learned in school is certain (Item 38). In summary, the students here who do not believe in quick learning accordingly believe that it is valuable to work long on problems, that knowledge is acquired gradually through the integration of new information into the old one, and knowledge changes over time.

Table 2

*Speed of Knowledge Acquisition*

[a]1= strongly disagree, 2= disagree, 3= not sure, 4= agree, 5= strongly agree

| | 1 | 2 | 3 | 4 | 5[a] |
|---|---|---|---|---|---|
| | 3. If something can be learned, it will be learned immediately. | | | | |
| Numbers | 47 | 32 | 27 | 28 | 18 |
| Percentages | 30.9 | 21.1 | 17.8 | 18.4 | 11.8 |
| | 7. Almost all the information you can understand from a textbook you will get during the first reading. | | | | |
| Numbers | 39 | 44 | 41 | 18 | 13 |
| Percentages | 25.2 | 28.4 | 26.5 | 11.6 | 8.4 |
| | 11. You will just get confused if you try to integrate new ideas in a textbook with knowledge you already have about a topic. | | | | |
| Numbers | 72 | 35 | 27 | 13 | 8 |
| Percentages | 46.5 | 22.6 | 17.4 | 8.4 | 5.2 |
| | 16. Working on a difficult problem for an extended period of time pays off only for smart students. | | | | |
| Numbers | 85 | 27 | 27 | 7 | 7 |
| Percentages | 55.6 | 17.6 | 17.6 | 4.6 | 4.6 |
| | 18. Usually, if you are going to understand something, it will make sense to you the first time. | | | | |
| Numbers | 40 | 36 | 33 | 34 | 12 |
| Percentages | 25.8 | 23.2 | 21.3 | 21.9 | 7.7 |
| | 24. If I cannot understand something quickly, it usually means I will never understand it. | | | | |
| Numbers | 103 | 23 | 14 | 7 | 8 |
| Percentages | 66.5 | 14.8 | 9.0 | 4.5 | 5.2 |
| | 34. Most words have one clear meaning. | | | | |
| Numbers | 50 | 36 | 26 | 27 | 11 |
| Percentages | 33.3 | 24.0 | 17.3 | 18.0 | 7.3 |
| | 38. The information we learn in school is certain and unchanging. | | | | |
| Numbers | 96 | 34 | 13 | 7 | 4 |
| Percentages | 62.3 | 22.1 | 8.4 | 4.5 | 2.6 |
| Total Mean Value | | | 2.16 | | |

It could be deduced that the students' beliefs regarding the "Speed of Knowledge Acquisition" are sophisticated beliefs when the mean value of all the eight items is also examined. The total mean value of this dimension was found to be 2.16. For the interview question whether knowledge acquisition is a quick or a gradual process that needs time, nine

of the students stated that learning requires both time and effort supporting the abovementioned results. One interviewee even placed a long acquisition process in the center of education as in the excerpt below.

**Ex.1.** *Knowledge acquisition is a long process which needs effort. That's why we have education.*

Dimension 2 is related to the "Structure of Knowledge" and it contains 11 items. This factor is mainly about the complexity, clarity, and the result-oriented nature of knowledge. High scores on this dimension represent the view that knowledge is simple and unambiguous while low scores support the sophisticated view that knowledge is often complex and ambiguous. Often, there is no right answer.

Table 3 shows the students' responses to the 11 items in the second dimension "Structure of Knowledge". Item 4, 5, 12, 33, and 36 examine students' beliefs about the complexity of knowledge. As can be seen from the table, between 51% and 83% of the students preferred simple knowledge rather than complex natured knowledge. For example; 83% of the students stated that they preferred specific facts when they study (Item 12). Item 13, 21, 30, and 31 attempt to find out the students' beliefs related to the clarity of knowledge. Between 65% and 77% of the students preferred knowledge to be clear. For instance; 77% of the students were in favor of an education system where educators utilized facts more and theorized less. Item 26 seeks to determine the students' preference about reaching unambiguous results while Item 28 attempts to understand whether the students value effort spent on problems resulting in ambiguity. Forty-eight percent of the students expected unambiguous answers while 52% were either negative or unsure about certain results (Item 26). However, only 20% of these students perceived it as a waste of time to work on problems with ambiguous outcomes proving that they valued effort (Item 28). In short, the answers to the items in this dimension show that the students preferred simple and clear knowledge. They seemed to be unsure about expecting unambiguous results and tended to value effort made on problems with ambiguous results.

As for the interview question whether learning process should be all clear, seven of ten students defended an understanding of knowledge where it is perceived as complex. This perception of knowledge does not seem to support the results obtained in the questionnaire

Table 3

*Structure of Knowledge*

| | 1 | 2 | 3 | 4 | 5[a] |
|---|---|---|---|---|---|
| | 4. I like information to be presented in a straightforward fashion; I do not like having to read between the lines. | | | | |
| Numbers | 16 | 28 | 19 | 24 | 67 |
| Percentages | 10.4 | 18.2 | 12.3 | 15.6 | 43.5 |
| | 5. It is difficult to learn from a textbook unless you start at the beginning and master one section at a time. | | | | |
| Numbers | 10 | 17 | 46 | 50 | 32 |
| Percentages | 6.5 | 11.0 | 29.7 | 32.3 | 20.6 |
| | 12. When I study, I look for specific facts. | | | | |
| Numbers | 2 | 6 | 18 | 52 | 77 |
| Percentages | 1.3 | 3.9 | 11.6 | 33.5 | 49.7 |
| | 13. If professors would stick to the facts and theorize less, one could get more out of college. | | | | |
| Numbers | 7 | 8 | 21 | 33 | 86 |
| Percentages | 4.5 | 5.2 | 13.5 | 21.3 | 55.5 |
| | 21. I really appreciate instructors who organize their lectures carefully and then stick to their plan. | | | | |
| Numbers | 18 | 10 | 19 | 35 | 72 |
| Percentages | 11.7 | 6.5 | 12.3 | 22.7 | 46.8 |
| | 26. I do not like movies that do not have a clear-cut ending. | | | | |
| Numbers | 30 | 27 | 23 | 29 | 46 |
| Percentages | 19.4 | 17.4 | 14.8 | 18.7 | 29.7 |
| | 28. It is a waste of time to work on problems that have no possibility of coming out with a clear-cut answer. | | | | |
| Numbers | 58 | 42 | 23 | 14 | 17 |
| Percentages | 37.7 | 27.3 | 14.9 | 9.1 | 11.0 |
| | 30. It is annoying to listen to lecturers who cannot make their mind up about what they believe. | | | | |
| Numbers | 13 | 16 | 26 | 32 | 68 |
| Percentages | 8.4 | 10.3 | 16.8 | 20.6 | 43.9 |
| | 31. A good teacher's job is to keep students from wandering off the right track. | | | | |
| Numbers | 20 | 8 | 24 | 39 | 64 |
| Percentages | 12.9 | 5.2 | 15.5 | 25.2 | 41.3 |
| | 33. The best thing about science courses is that most problems have only one right answer. | | | | |
| Numbers | 14 | 28 | 33 | 37 | 41 |
| Percentages | 9.2 | 18.3 | 21.6 | 24.2 | 26.8 |
| | 36. When I learn, I prefer to make things as simple as possible. | | | | |
| Numbers | 16 | 20 | 29 | 38 | 52 |
| Percentages | 10.3 | 12.9 | 18.7 | 24.5 | 33.5 |
| Total Mean Value | | | 3.59 | | |

[a]1= strongly disagree, 2= disagree, 3= not sure, 4= agree, 5= strongly agree

where knowledge was perceived as simple and clear. The inconsistency here could be exemplified and explained by one response from the students in the next excerpt.

**Ex.2.** *There are two types of knowledge. I cannot defend clarity if it is the type of knowledge in which one can take a point of view.*

When the detailed information was elicited with the interview question whether it is waste of time to deal with questions that do not have clear answers, it was understood that the students valued the effort made on unsolved problems since the effort would improve their understanding of the issue. However, four interviewed students still perceived it as a waste of time. One example of the responses from the students who believed in effort is in the next excerpt.

**Ex.3.** *It is not waste of time. By contrast, it is more valuable to work on the unsolved since it improves our field of research.*

The total mean value of this dimension was calculated as 3.59. When quantitative and qualitative results of this dimension are assessed together, it is plausible to say the students seem to be confused about the simplicity, clarity, and result-oriented nature of knowledge. While quantitative results showed that the students were slightly on the naïve side of the dimension, qualitative results proved to be slightly sophisticated.

The third dimension was named "Knowledge Construction and Modification" and it consisted of 11 items. This factor fundamentally attempts to identify the perceptions on the strategies by which knowledge is acquired and modified. The integration of information into personal scheme, the sources of information, changing and uncertain nature of knowledge, and effort made on unsolved issues are main themes in the dimension. Low scores on this dimension imply that knowledge is certain, acquired passively, and cannot be questioned while high scores reflect the view that knowledge is changing, constructed personally, and debatable.

Table 4 indicates the students' answers to 11 items categorized under the dimension "Knowledge Construction and Modification". Item 8, 25, and 32 investigate whether students believe in the integration of new information into the existing knowledge. As understood from the table, between 52% and 70% of the students supported the idea that new information makes sense as long as it gets related to the existing knowledge. For instance; 70% of the students were aware that knowledge could be constructed by reorganizing new information into one's own personal scheme (Item 8). Item 6, 10, 15, 22, and 23 attempt to determine whether knowledge is passively acquired or personally constructed. Between 65% and 85% of the students recognized the role of personal contribution to the interpretation of knowledge. For example; 85% of the students stated

Table 4

*Knowledge Construction and Modification*

| | 1 | 2 | 3 | 4 | 5[a] |
|---|---|---|---|---|---|
| | 2. The only thing that is certain is uncertainty itself. | | | | |
| Numbers | 31 | 24 | 39 | 25 | 32 |
| Percentages | 20.5 | 15.9 | 25.8 | 16.6 | 21.2 |
| | 6. Forming your own ideas is more important than learning what the textbooks say. | | | | |
| Numbers | 6 | 19 | 29 | 47 | 53 |
| Percentages | 3.9 | 12.3 | 18.8 | 30.5 | 34.4 |
| | 8. A really good way to understand a textbook is to reorganize the information according to your own personal scheme. | | | | |
| Numbers | 10 | 13 | 23 | 40 | 69 |
| Percentages | 6.5 | 8.4 | 14.8 | 25.8 | 44.5 |
| | 10. You should evaluate the accuracy of information in textbooks if you are familiar with the topic. | | | | |
| Numbers | 7 | 9 | 22 | 60 | 56 |
| Percentages | 4.5 | 5.8 | 14.3 | 39.0 | 36.4 |
| | 15. Wisdom is not knowing the answers, but knowing how to find the answers. | | | | |
| Numbers | 4 | 4 | 15 | 38 | 94 |
| Percentages | 2.6 | 2.6 | 9.7 | 24.5 | 60.6 |
| | 20. Today's facts may be tomorrow's fiction. | | | | |
| Numbers | 7 | 14 | 34 | 41 | 59 |
| Percentages | 4.5 | 9.0 | 21.9 | 26.5 | 38.1 |
| | 22. The most important part of scientific work is original thinking. | | | | |
| Numbers | 4 | 12 | 19 | 45 | 73 |
| Percentages | 2.6 | 7.8 | 12.4 | 29.4 | 47.7 |
| | 23. Even advice from experts should be questioned. | | | | |
| Numbers | 7 | 12 | 20 | 38 | 77 |
| Percentages | 4.5 | 7.8 | 13.0 | 24.7 | 50.0 |
| | 25. I try my best to combine information across chapters or even across classes. | | | | |
| Numbers | 9 | 22 | 43 | 45 | 36 |
| Percentages | 5.8 | 14.2 | 27.7 | 29.0 | 23.2 |
| | 32. A sentence has little meaning unless you know the situation in which it was spoken. | | | | |
| Numbers | 9 | 23 | 34 | 42 | 45 |
| Percentages | 5.9 | 15.0 | 22.2 | 27.5 | 29.4 |
| | 37. I find it refreshing to think about issues that experts cannot agree on. | | | | |
| Numbers | 15 | 20 | 27 | 49 | 44 |
| Percentages | 9.7 | 12.9 | 17.4 | 31.6 | 28.4 |
| Total Mean Value | | | 3.87 | | |

[a]1= strongly disagree, 2= disagree, 3= not sure, 4= agree, 5= strongly agree

knowing how to find information is wiser than knowing the information itself. Item 20 seeks information about the changing nature of knowledge. Sixty-five percent of the students believed that knowledge could change in time (Item 20). Item 2 questions whether knowledge is certain. Thirty-eight percent of the students believed in uncertainty while 36% did not agree (Item 2). Lastly, Item 37 attempts to explore students' preference about dwelling on unsolved issues. Sixty percent of the students believed that it was rejuvenating to think about unsolved issues proving that they valued effort (Item 37). To sum up, the students who

believed in the personal construction of knowledge also assumed that new information is integrated into the personal scheme and knowledge has a changing nature thus valued effort made to solve issues. The students seemed to be unsure about the certainty of knowledge.

One student's comment on the statement in the interview that the only thing that is certain is uncertainty itself helped explain the doubt in the students' minds regarding the certainty. She stated that the existence of uncertainty naturally makes uncertainty itself uncertain. As a result, the uncertain way the students responded to the item related to the certainty of knowledge (Item 2) reflected their sophistication with respect to certainty of knowledge. All of the interviewed students pronounced their belief in the evolving nature of knowledge, which promotes the quantitative results obtained. The student's response in the excerpt helps understand the factors knowledge changes according to.

**Ex.4.** *Knowledge depends on the person and time.*

The total mean value of the dimension indicated a sophisticated view towards this dimension at a level of 3.87. It is reasonable to state that the students held sophisticated beliefs as to the dimension "Knowledge Construction and Modification" when quantitative and qualitative results are assessed collectively.

Five items in the fourth dimension called as "Characteristics of Successful Students" deal with the perception of an innate ability and the manner in which knowledge is structured. High scores on this dimension suggest that success comes from birth, and successful students outperform others thanks to their special traits. By contrast, low scores correspond to the idea that success is attainable as long as one recognizes the role of effort and time.

Table 5 illustrates the responses from the students given to the five items in the dimension "Characteristics of Successful Students". The total mean value of the dimension locates the students in the sophisticated side of the matter with a level of 2.56. That indicates the fact that the participants in this study agree success is attainable as long as one recognizes the role of effort and time. Item 17 and 35 question students' belief in the existence of innate ability. As the table indicates, 56% of the students disagreed that some
people are born as good learners (Item 17) and accordingly %57 of the students did not agree that really smart students do not need to work hard in school (Item 35). Item 14, 19,
Table 5

*Characteristics of Successful Students*

[a]1= strongly disagree, 2= disagree, 3= not sure, 4= agree, 5= strongly agree

| | 1 | 2 | 3 | 4 | 5[a] |
|---|---|---|---|---|---|
| | 14. Being a good student generally involves memorizing a lot of facts. | | | | |
| Numbers | 89 | 33 | 8 | 11 | 13 |
| Percentages | 57.8 | 21.4 | 5.2 | 7.1 | 8.4 |
| | 17. Some people are born good learners; others are stuck with a limited ability. | | | | |
| Numbers | 60 | 27 | 28 | 19 | 21 |
| Percentages | 38.7 | 17.4 | 18.1 | 12.3 | 13.5 |
| | 19. Successful students understand things quickly. | | | | |
| Numbers | 33 | 31 | 28 | 37 | 25 |
| Percentages | 21.4 | 20.1 | 18.2 | 24.0 | 16.2 |
| | 29. Understanding main ideas is easy for good students. | | | | |
| Numbers | 25 | 23 | 39 | 44 | 24 |
| Percentages | 16.1 | 14.8 | 25.2 | 28.4 | 15.5 |
| | 35. The really smart students do not have to work hard to do well in school. | | | | |
| Numbers | 55 | 34 | 24 | 25 | 17 |
| Percentages | 35.5 | 21.9 | 15.5 | 16.1 | 11.0 |
| Total Mean Value | | | 2.56 | | |

and 29 address the characteristics of successful students. Seventy-nine percent of the students were convinced that memorization is not related to being a good learner (Item 14). Forty-one percent of the students disagreed that successful students understand things quickly while 40% agreed (Item 19). Forty-four percent of the students associated understanding main ideas to being a good student while 56% were either negative or unsure (Item 29). Shortly, most of the students did not believe in ability thus valued effort and time. The rejection of memorization, the hesitation about the idea that successful students understand things quickly, and the fact that most of the students did not associate understanding main ideas to being a good student support their beliefs in the effort and time.

The interview question about whether some are born with ability while some are not was asked to the students in this dimension. Five students in the interviews put more emphasis on ability for learning while three students defended the value of effort. Two students also highlighted the balance as a kind of negotiation. The percentage of the students who believed in ability seems higher in the interviews. However, the response of a student believing in ability in the excerpt shows that these five students also does not seem to reject the role of effort.

**Ex.5.** *Effort will get you to a good point in life even though you cannot get to the top without ability.*

Dimension 5, with the label "Attainability of Truth", consists of three items. This dimension questions whether one can reach the objective truth or not. High scores on this dimension represent the idea that there is an objective truth and it is possible to reach that truth in every aspect of life. On the other hand, low scores mean that there are no "single right answers".

Table 6

*Attainability of Truth*

| | 1 | 2 | 3 | 4 | 5[a] |
|---|---|---|---|---|---|
| 1. You can believe most things you read. | | | | | |
| Numbers | 30 | 48 | 48 | 23 | 6 |
| Percentages | 19.4 | 31.0 | 31.0 | 14.8 | 3.9 |
| 9. If scientists try hard enough, they can find the answer to almost every question. | | | | | |
| Numbers | 39 | 31 | 28 | 34 | 21 |
| Percentages | 25.5 | 20.3 | 18.3 | 22.2 | 13.7 |
| 27. Scientists can ultimately get to the truth. | | | | | |
| Numbers | 19 | 17 | 37 | 46 | 33 |
| Percentages | 12.5 | 11.2 | 24.3 | 30.3 | 21.7 |
| Total Mean Value | | | 2.88 | | |

[a]1= strongly disagree, 2= disagree, 3= not sure, 4= agree, 5= strongly agree

In Table 6, the students' responses to the three items concerning "Attainability of Truth" are displayed. Item 9 and 27 examine students' faith in reaching the objective truth. As the table indicates, 46% of the students disagreed that scientists can find answers to every question (Item 9). However, they seemed positive about ultimately getting to the truth with 52% (Item 27). Item 1 questions whether truth is relative. Fifty percent of the students were also skeptic about the veracity of the information which one reads (Item 1). In summary, the students' answers to the three items in this dimension show that the students cannot make up their mind about what they believe as to reaching the objective truth.

The information obtained with the interview question about whether scientists can get to the ultimate truth was in parallel with quantitative results in that half of the students stated every question could be answered. However, the students appeared more sophisticated in the interviews with all the interviewees pronouncing their disbelief in the likeliness of an objective truth. Seven students also emphasized the relativity of objective truth to explain their doubt about the things they read. The different results belonging to two interview

questions related to this dimension indicate as well that the students feel uncertain about getting to the ultimate truth. The responses from the students in the next two excerpts exemplify the different results obtained so far.

**Ex.6.** *When you try hard, there is nothing that you cannot answer.*

**Ex.7.** *There will always be new information and things to be found.*

The total mean value of the dimension was calculated as 2.88. The total mean value also supports the previous results which proved to be neither naïve nor sophisticated. When all the five dimensions are assessed as a whole, the total mean values of three dimensions correspond to sophistication: "Speed of Knowledge Acquisition" (total mean value at 2.16), "Knowledge Construction and Modification" (total mean value at 3.87 --- higher scores meaning sophistication due to reverse scoring), and "Characteristics of Successful Students" (total mean value at 2.56). The total mean value of one dimension corresponds to naivety: "Structure of Knowledge" (total mean value at 3.59). The total mean value of the last dimension corresponds to neither sophistication nor naivety: (total mean value at 2.88). The overall results indicate that the students value effort and time in general and spent on unsolved issues in particular. Therefore, they do not believe in quick learning and support gradual learning. Accordingly, they rely on personal construction and integration of knowledge and consider that knowledge is changing. However, these students also hold the belief that knowledge should be simple and clear and they cannot be sure about expecting unambiguous results. The existence of naïve and sophisticated beliefs at the same time in the students' minds also supports the neutral (neither naïve nor sophisticated) results obtained in the dimension "Attainability of Truth".

### 4.3. The Findings about Language Learning Beliefs

The scale used in this study consists of five major themes. Each theme in the inventory questions different aspects of language learning beliefs. Six items in the first theme named as "The Difficulty of Language Learning" chiefly aim to reveal students' opinions as to the difficulty of the language learning task itself (Item 14), the relative difficulty of the target language (Item 3, 4 and 6) and language skills (Item 24 and 28).

The students' responses to the items in the theme "The Difficulty of Language Learning" are reported in Table 7. As one can suggest by looking at the table, 55% of the participants were of the idea that language learning could be realized in less than two years

Table 7

*The Difficulty of Language Learning*

| | 1 | 2 | 3 | 4 | 5[a] |
|---|---|---|---|---|---|
| | 3. Some languages are easier to learn than others. | | | | |
| Numbers | 7 | 7 | 19 | 43 | 72 |
| Percentages | 4.7 | 4.7 | 12.8 | 29.1 | 48.6 |
| | [b]4. The language I am trying to learn is: | | | | |
| Numbers | 14 | 29 | 62 | 29 | 18 |
| Percentages | 9.2 | 19.1 | 40.8 | 19.1 | 11.8 |
| | 6. I believe that I will ultimately learn to speak this language very well. | | | | |
| Numbers | 7 | 13 | 36 | 33 | 64 |
| Percentages | 4.6 | 8.5 | 23.5 | 21.6 | 41.8 |
| | [c]14. If someone spent one hour a day learning a language, how long would it take him/her to become fluent? | | | | |
| Numbers | 32 | 48 | 27 | 9 | 29 |
| Percentages | 22.1 | 33.1 | 18.6 | 6.2 | 20.0 |
| | 24. It is easier to speak than to understand a foreign language. | | | | |
| Numbers | 48 | 39 | 30 | 19 | 19 |
| Percentages | 31.0 | 25.2 | 19.4 | 12.3 | 12.3 |
| | 28. It is easier to read and write a language than to speak and understand it. | | | | |
| Numbers | 25 | 19 | 29 | 34 | 47 |
| Percentages | 16.2 | 12.3 | 18.8 | 22.1 | 30.5 |

[a]1= strongly disagree, 2= disagree, 3= not sure, 4= agree, 5= strongly agree

[b]1= a very easy language, 2= an easy language, 3= a language of medium difficulty, 4= a difficult language, 5= a very difficult language

[c]1= less than a year, 2= 1-2 years, 3= 3-5 years, 4= 5- 10 years, 5= you cannot learn a language in 1 hour a day.

(Item 14). As could be along with the idea that language learning happens quickly, 63% of the students were motivated and confident to learn their target language very well (Item 6). The greatest portion of them (41%) perceived their target language as of medium difficulty, which could serve as a sign to their motivational state (Item 4). Seventy-eight percent of the students surveyed believed in the hierarchical order of difficulty in language learning (Item 3). As for the relative difficulty of different language skills, 56% of the students were of the opinion that speaking is a more difficult language skill than understanding (Item 24). Fifty-three percent of the participants also thought that writing and reading a language is easier than speaking and understanding it (Item 28). The answers to the interview question whether everyone can learn a language explain the results in this dimension. All the students

interviewed stated that everyone could learn a language as long as enough effort is made. The response of a student shows the importance of effort in the excerpt below.

**Ex.8.** *Even if someone has language aptitude, it would mean nothing without effort.*

The second theme is called “Foreign Language Aptitude” and consists of nine items. This theme is mainly based upon the belief in the existence of special abilities from birth for language learning (Item 2, 15, and 34). It also taps beliefs about who successful language learners are (Item 1, 10, 22, 29, 32, and 33).

Table 8

*Foreign Language Aptitude*

| | 1 | 2 | 3 | 4 | 5[a] |
|---|---|---|---|---|---|
| | 1. It is easier for children than adults to learn a foreign language. | | | | |
| Numbers | 4 | 2 | 9 | 39 | 100 |
| Percentages | 2.6 | 1.3 | 5.8 | 25.3 | 64.9 |
| | 2. Some people are born with a special ability which helps them learn a foreign language. | | | | |
| Numbers | 30 | 22 | 25 | 41 | 35 |
| Percentages | 19.6 | 14.4 | 16.3 | 26.8 | 22.9 |
| | 10. It is easier for someone who already speaks a foreign language to learn another one. | | | | |
| Numbers | 13 | 8 | 29 | 66 | 38 |
| Percentages | 8.4 | 5.2 | 18.8 | 42.9 | 24.7 |
| | 15. I have foreign language aptitude. | | | | |
| Numbers | 23 | 23 | 43 | 36 | 30 |
| Percentages | 14.8 | 14.8 | 27.7 | 23.2 | 19.4 |
| | 22. Women are better than men at learning foreign languages. | | | | |
| Numbers | 63 | 17 | 40 | 14 | 21 |
| Percentages | 40.6 | 11.0 | 25.8 | 9.0 | 13.5 |
| | 29. People who are good at math and science are not good at learning foreign languages. | | | | |
| Numbers | 67 | 22 | 30 | 22 | 13 |
| Percentages | 43.5 | 14.3 | 19.5 | 14.3 | 8.4 |
| | 32. People who speak more than one language well are very intelligent. | | | | |
| Numbers | 49 | 30 | 39 | 23 | 13 |
| Percentages | 31.8 | 19.5 | 25.3 | 14.9 | 8.4 |
| | 33. Turks are good at learning foreign languages. | | | | |
| Numbers | 42 | 40 | 44 | 20 | 9 |
| Percentages | 27.1 | 25.8 | 28.4 | 12.9 | 5.8 |
| | 34. Everyone can learn to speak a foreign language. | | | | |
| Numbers | 9 | 10 | 19 | 25 | 92 |
| Percentages | 5.8 | 6.5 | 12.3 | 16.1 | 59.4 |

[a]1= strongly disagree, 2= disagree, 3= not sure, 4= agree, 5= strongly agree

Table 8 reflects the responses by the students to the items in the theme “Foreign Language Aptitude”. The table demonstrates that only half of the students were convinced that people are born with foreign language aptitude (Item 2). However, the students were less convinced with 43% that they possessed this special ability (Item 15). Seventy-five percent of the students also believed that language learning is a task that everyone can achieve (Item 34). Even though the students did not establish any positive connections between good language learning and gender, intelligence, aptitude for science, or the nationality they belong to (Item 22, 29, 32, and 33), 90% agreed that children could learn a foreign language better (Item 1). Sixty-seven percent of the students also believed that speaking a language facilitates the learning of the ones to be learned in future (Item 10). In short, the students tended to believe

that everyone can learn a language with effort and language learning is not related to intelligence or innate ability.

The interview question about whether everyone can learn a language also supported the quantitative results. In the interviews, it was understood that almost all the students placed a greater value on effort rather than aptitude. Yet, they could not help mentioning the supporting effect of language learning ability. Half of the students agreed with the statement in Item 2 in the questionnaire even though they valued effort more since they perceived the role of ability as the helper, not the main force. The response of a student to the interview question explains well the roles of effort and ability in language learning process.

**Ex.9.** *Sure, ability also affects the process but effort comes first.*

"The Nature of Language Learning" is the third theme and it is made up of seven items. The items in this theme address students' perception of the essence of language learning process (Item 16, 20, and 26), students' perception of language learning in comparison to other school subjects (Item 25), the cultural and contextual side of language learning (Item 8 and 11), and their perception of the structural differences between Turkish and English (Item 5).

The responses to the items in this theme are displayed in Table 9. As seen in the table, the limited view of language learning that it is merely dependent upon vocabulary knowledge, grammar or translation from native language was supported by many students. Even though the students agreed by 47% and 37% respectively that grammar or translation is the essence of language learning (Item 20 and 26), 82% of the students perceived vocabulary words as the focus of language learning (Item 16).

Eighty-seven percent of the students held the belief that language learning is different from other school subjects (Item 25). Forty-seven percent agreed that foreign culture is a must to be able to speak a foreign language while 30% disagreed (Item 8). Only %5, however, denied the effectiveness of living in a foreign country for learning a foreign language (Item 11). Eighty-six percent of the students also found Turkish and English structurally different (Item 5).

Table 9

*The Nature of Language Learning*

| | 1 | 2 | 3 | 4 | 5[a] |
|---|---|---|---|---|---|
| | 5. The language I am trying to learn is structured in the same way as English. | | | | |
| Numbers | 101 | 31 | 8 | 8 | 5 |
| Percentages | 66.0 | 20.3 | 5.2 | 5.2 | 3.3 |
| | 8. It is necessary to know the foreign culture in order to speak a foreign language. | | | | |
| Numbers | 22 | 24 | 35 | 43 | 30 |
| Percentages | 14.3 | 15.6 | 22.7 | 27.9 | 19.5 |
| | 11. It is better to learn a foreign language in the foreign country. | | | | |
| Numbers | 3 | 5 | 7 | 23 | 116 |
| Percentages | 1.9 | 3.2 | 4.5 | 14.9 | 75.3 |
| | 16. Learning a foreign language is mostly a matter of learning a lot of new vocabulary words. | | | | |
| Numbers | 6 | 6 | 16 | 58 | 69 |
| Percentages | 3.9 | 3.9 | 10.3 | 37.4 | 44.5 |
| | 20. Learning a foreign language is mostly a matter of learning a lot of grammar rules. | | | | |
| Numbers | 31 | 20 | 31 | 40 | 32 |
| Percentages | 20.1 | 13.0 | 20.1 | 26.0 | 20.8 |
| | 25. Learning a foreign language is different from learning other school subjects. | | | | |
| Numbers | 3 | 6 | 11 | 51 | 83 |
| Percentages | 1.9 | 3.9 | 7.1 | 33.1 | 53.9 |
| | 26. Learning another language is a matter of translating from English. | | | | |
| Numbers | 25 | 33 | 40 | 37 | 20 |
| Percentages | 16.1 | 21.3 | 25.8 | 23.9 | 12.9 |

[a]1= strongly disagree, 2= disagree, 3= not sure, 4= agree, 5= strongly agree

The interview question whether learning languages is different from other school subjects yielded results either supporting or explaining the quantitative results above. The students in the interviews found language learning different from other school subjects and presented many reasons to explain the perception of difference. The most striking response was that learning a new language requires a new way of thinking and adaptation to a new culture. Other responses were that languages can be practiced in daily life, don't have formulas or clear explanations, have many exceptions, and are hard to learn on your own. To summarize the quantitative and qualitative results, the students believed that language learning was different from other school subjects. The first reason for their belief was their perception of language learning as adaptation to new culture and way of thinking. This explains why the students were in favor of learning a language in a foreign country and did not rely on the translation while learning languages. Another reason that they stated was the lack of clear explanations and formulas in languages. That illustrates why the students did not count on grammar in language learning. Moreover, the fact that the students perceived Turkish and

English structurally different might be the reason why the students defined languages as "having many exceptions" and "hard to learn on one's own". Lastly, the students believed that vocabulary was the focus of language learning even though they did not feel the same for grammar or translation. One student's answer to the interview question here summarizes the students' approach to language learning as an area different from other school subjects.

**Ex.10.** *Language learning is completely different from other school subjects because you have to learn living in the language to be able to speak it.*

The fourth theme is called "Learning and Communication Strategies" and consists of eight items. This theme is mainly about the students' learning and communication strategies, and it reflects well the students' language learning routines. While Items 17 and 21 are related to learning strategies, others address communication strategies.

Table 10

*Learning and Communication Strategies*

| | 1 | 2 | 3 | 4 | 5[a] |
|---|---|---|---|---|---|
| | 7. It is important to speak a foreign language with an excellent accent. | | | | |
| Numbers | 11 | 29 | 25 | 37 | 52 |
| Percentages | 7.1 | 18.8 | 16.2 | 24.0 | 33.8 |
| | 9. You shouldn't say anything in the language until you can say it correctly. | | | | |
| Numbers | 77 | 32 | 26 | 10 | 9 |
| Percentages | 50.0 | 20.8 | 16.9 | 6.5 | 5.8 |
| | 12. If I heard someone speaking the language I am trying to learn, I would go up to them so that I could practice speaking the language. | | | | |
| Numbers | 11 | 12 | 35 | 42 | 54 |
| Percentages | 7.1 | 7.8 | 22.7 | 27.3 | 35.1 |
| | 13. It is OK. to guess if you don't know a word in the foreign language. | | | | |
| Numbers | 18 | 17 | 33 | 45 | 41 |
| Percentages | 11.7 | 11.0 | 21.4 | 29.2 | 26.6 |
| | 17. It is important to repeat and practice a lot. | | | | |
| Numbers | 3 | 3 | 6 | 31 | 111 |
| Percentages | 1.9 | 1.9 | 3.9 | 20.1 | 72.1 |
| | 18. I feel self-conscious speaking the foreign language in front of other people. | | | | |
| Numbers | 45 | 35 | 23 | 32 | 20 |
| Percentages | 29.0 | 22.6 | 14.8 | 20.6 | 12.9 |
| | 19. If you are allowed to make mistakes in the beginning it will be hard to get rid of them later on. | | | | |
| Numbers | 5 | 3 | 14 | 41 | 92 |
| Percentages | 3.2 | 1.9 | 9.0 | 26.5 | 59.4 |
| | 21. It is important to learn in the language classroom. | | | | |
| Numbers | 14 | 16 | 32 | 43 | 49 |
| Percentages | 9.1 | 10.4 | 20.8 | 27.9 | 31.8 |

[a]1= strongly disagree, 2= disagree, 3= not sure, 4= agree, 5= strongly agree

Table 10 shows the responses to eight items in the theme “Learning and Communication Strategies”. As the table indicates, 92% of the students placed great store on repetition and practice (Item 17). Fifty-nine percent of them also appreciated the learning occurring in language classrooms (Item 21).

As for communication strategies, 56% of the students were of the idea that it is acceptable to guess the meaning of a word in the foreign language (Item 13) and 71% of the students disagreed on the idea that one should keep quiet until they say things correctly (Item 9). Fifty-two percent did not feel self-conscious speaking in front of other people (Item 18) and 62% of them were confident enough to practice the target language (Item 12). However, 86% of the students also believed in the urgency of the task “getting rid of mistakes” (Item 19). Furthermore, 58% of the students emphasized the importance of speaking with an excellent accent (Item 7). In short, the students were in favor of multiple trials in communication as they believed that it led to a more complete and quicker learning. The search for an excellent accent and language learning without mistakes as an ultimate goal might explain the importance placed on repetition and classroom learning as means to avoid mistakes. The interview question whether mistakes are acceptable when communicating in a foreign language yielded similar results. Except two students who did not believe in multiple trials, eight students stated that multiple trials are favorable since they enable to build up to a complete learning without mistakes. The response of the student in the excerpt below illustrates the students’ point of view towards multiple trials and mistakes.

**Ex.11.** *Even though it feels more secure not to attempt in earlier times, multiple trials might lead to a quicker learning.*

“Motivations and Expectations” is the last theme in the inventory and made up of four items. The items in this theme concern the expectations the students have about learning their target language. The responses to the four items in the theme “Motivations and Expectations” are shown in Table 11. As can be seen from the table, around 91% of students perceived language learning as a means to access many jobs and other opportunities (Item 23 and 27). By contrast, the students who wanted to learn the target language for integrative purposes were relatively few by 32% (Item 31). Fifty percent of the students also believed that Turks perceive speaking a foreign language as important (Item 30). In short, most of the students

had instrumental motivation and half of the students did not think Turks were motivated to learn a foreign language.

Table 11

*Motivations and Expectations*

| | 1 | 2 | 3 | 4 | 5[a] |
|---|---|---|---|---|---|
| | 23. If I get to speak this language very well, I will have many opportunities to use it. | | | | |
| Numbers | 6 | 3 | 5 | 29 | 112 |
| Percentages | 3.9 | 1.9 | 3.2 | 18.7 | 72.3 |
| | 27. If I learn to speak this language very well, it will help me get a good job. | | | | |
| Numbers | 1 | 7 | 5 | 27 | 115 |
| Percentages | 0.6 | 4.5 | 3.2 | 17.4 | 74.2 |
| | 30. Turks think that it is important to speak a foreign language. | | | | |
| Numbers | 26 | 20 | 32 | 46 | 31 |
| Percentages | 16.8 | 12.9 | 20.6 | 29.7 | 20.0 |
| | 31. I would like to learn this language so that I can get to know its speakers better. | | | | |
| Numbers | 45 | 31 | 30 | 33 | 16 |
| Percentages | 29.0 | 20.0 | 19.4 | 21.3 | 10.3 |

[a]1= strongly disagree, 2= disagree, 3= not sure, 4= agree, 5= strongly agree

When the students were asked what purpose they were learning English for in the interviews, there were more students with instrumental motivation as well. One student expressed his instrumental motivation with the words in the excerpt below.

**Ex.12.** *Why would not I learn English while the whole world is speaking English! It could help me access many opportunities.*

### 4.4. The Relationship between Epistemological Beliefs and Language Learning Beliefs

The effect of epistemological beliefs on language learning beliefs has been another focus of the current study in addition to the demonstration of individual beliefs. The explanation of such a relationship will be made according to the results of the correlation and regression analyses. In the presenting of the results from these analyses as in tables, the capital letters corresponded to the five dimensions of epistemological beliefs (A= Attainability of Truth, B= Knowledge Construction and Modification, C= Speed of Knowledge Acquisition, D= Structure of Knowledge, and E= Characteristics of Successful Students) and the small letters to the five themes of language learning beliefs (a= Foreign Language Aptitude, b= The Difficulty of Language Learning, c= The Nature of Language Learning, d= Learning and Communication Strategies, and e= Motivations and Expectations).

Table 12

*Correlation Values between the Five Dimensions of Epistemological Beliefs and the Five Themes of Language Learning Beliefs*

| | A | B | C | D | E | a | b | C | D | E |
|---|---|---|---|---|---|---|---|---|---|---|
| A | 1 | | | | | | | | | |
| B | .252** | 1 | | | | | | | | |
| C | .216** | -.081 | 1 | | | | | | | |
| D | .237** | .431** | .134 | 1 | | | | | | |
| E | .157 | .029 | .285** | .133 | 1 | | | | | |
| a | .190* | .247** | .105 | .144 | .153 | 1 | | | | |
| b | .014 | .211** | -.020 | .045 | .106 | .392** | 1 | | | |
| c. | .079 | .271** | .292** | .286** | .188* | .303** | .256** | 1 | | |
| d | .011 | .273** | .001 | .107 | -.034 | .351** | .361** | .349** | 1 | |
| e | .095 | .246** | -.057 | .082 | .012 | .344** | .200* | .142 | .203* | 1 |

*. Correlation is significant at the. 05 level (2-tailed).

**. Correlation is significant at the. 01 level (2-tailed).

As can be seen from the table, two dimensions of epistemological beliefs were correlated with the themes of language learning beliefs at the significance level of .05. “Attainability of Truth” was positively correlated with “Foreign Language Aptitude” ($r = .190$, $p < .05$) and

"Characteristics of Successful Students" was positively correlated with "The Nature of Language Learning" ($r = .188$, $p < .05$). Furthermore, seven correlations were found between the dimensions of epistemological and the themes of language learning beliefs at the significance level of .01. "Knowledge Construction and Modification" was positively correlated with "Foreign Language Aptitude" ($r = .247$, $p < .01$), "The Difficulty of Language Learning" ($r = .211$, $p < .01$), "The Nature of Language Learning" ($r = .271$, $p < .01$), "Learning and Communication Strategies" ($r = .273$, $p < .01$), and "Motivations and Expectations" ($r = .246$, $p < .01$). Also, "Speed of Knowledge Acquisition" ($r = .292$, $p < .01$) and "Structure of Knowledge" ($r = .286$, $p < .01$) were positively correlated with "The Nature of Language Learning".

All significant correlation values found between epistemological and language learning beliefs could be called as weak with Pearson coefficients smaller than .300. That is, epistemological beliefs were still correlated with language learning beliefs even if this correlation took place at a low level. The students' beliefs as to how possible it is to attain the objective truth were lightly correlated with their faith in the existence of foreign language aptitude. Also, their beliefs about how to successfully learn were somewhat correlated with the students' beliefs about the nature of language learning task. The students' beliefs about how knowledge is constructed and modified were slightly correlated on the positive side with the idea of aptitude and the perception of difficulty in language learning, their beliefs about the nature and the strategies of language learning, and how motivated they feel in language learning. Lastly, the students' beliefs about whether knowledge is acquired quick and whether knowledge is simple had a small impact on their beliefs about how languages can be learned. It is worth noting that "Knowledge Construction and Modification" is the only dimension of epistemological beliefs that correlates with all the themes in language learning beliefs. "Knowledge Construction and Modification" involves the perceptions on the strategies by which knowledge is constructed and modified. That is, this dimension of epistemological beliefs relates to how new information is received, processed, and stored. Since language learning entails a kind of knowledge construction and modification, it seems quite likely to expect that beliefs about the construction of a foreign language will relate to beliefs about how knowledge is constructed in general.

Table 13 shows the results of regression analysis demonstrating how the five dimensions of epistemological beliefs predict the first language learning theme “Foreign Language Aptitude”.

Table 13

*The Results of Multiple Regression Analysis with Regard to the Prediction of Foreign Language Aptitude by the Dimensions of Epistemological Beliefs*

| Dependent Var. | Independent Var. | B | Standard Error | Beta | T | P |
|---|---|---|---|---|---|---|
| | Constant | 2.038 | .351 | | 5.806 | .000 |
| | A | .058 | .048 | .101 | 1.202 | .231 |
| a | B | .208 | .083 | .225 | 2.521 | .013 |
| | C | .055 | .067 | .070 | .828 | .409 |
| | D | -.001 | .080 | -.001 | -.009 | .993 |
| | E | .071 | .052 | .111 | 1.355 | .178 |

Multiple R = .314 $R^{2=}$ .099
Adj. $R^2$= .069 F(5,154) = 3.268 p = .008

The table shows that the independent variables in the model predict the dependent variable “Foreign Language Aptitude” significantly (R= .314, $R^2$ = .099, $p < .01$). As can be seen from the table, only the dimension “Knowledge Construction and Modification” contributed to the model significantly ($p < .05$).

Table 14

*The Results of Multiple Regression Analysis with Regard to the Prediction of the Difficulty of Language Learning by the Dimensions of Epistemological Beliefs*

| Dependent Var. | Independent Var. | B | Standard Error | Beta | T | p |
|---|---|---|---|---|---|---|
| | Constant | 1.587 | .323 | | 4.907 | .000 |
| | A | -.055 | .044 | -.097 | -1.237 | .218 |
| c | B | .229 | .076 | .252 | 3.004 | .003 |
| | C | .224 | .062 | .287 | 3.626 | .000 |
| | D | .133 | .074 | .149 | 1.798 | .074 |
| | E | .059 | .048 | .095 | 1.233 | .220 |
| Multiple R = .453 $R^{2=}$ .205<br>Adj. $R^2$= .178 F(5,154) = 7.682 p = .000 | | | | | | |

Table 14 shows the results of regression analysis demonstrating how the five dimensions of epistemological beliefs predict the second language learning theme “The Difficulty of Language Learning”. According to the results in the table, the regression model here is insignificant ($p > .05$) even though the dimension “Knowledge Construction and Modification” predicts the language learning theme “The Difficulty of Language Learning” significantly ($p < .01$).

Table 15

*The Results of Multiple Regression Analysis with Regard to the Prediction of the Nature of Language Learning by the Dimensions of Epistemological Beliefs*

| Dependent Var. | Independent Var. | B | Standard Error | Beta | T | p |
|---|---|---|---|---|---|---|
| | Constant | 2.626 | .357 | | 7.352 | .000 |
| | A | -.039 | .049 | -.067 | -.797 | .427 |
| d | B | .279 | .084 | .299 | 3.321 | .001 |
| | C | .043 | .068 | .054 | .638 | .524 |
| | D | -.007 | .082 | -.007 | -.080 | .936 |
| | E | -.030 | .053 | -.046 | -.561 | .576 |
| Multiple R = .286 $R^{2=}$ .082<br>Adj. $R^2$= .051 F(5,154) = 2.656 p = .025 | | | | | | |

Table 15 shows the results of regression analysis demonstrating how the five dimensions of epistemological beliefs predict the third language learning theme "The Nature of Language Learning". The table demonstrates that the independent variables in the model predict the dependent variable "The Nature of Language Learning" significantly (R= .453, $R^2$ = .205, p < .01). The dimensions "Knowledge Construction and Modification" and "Speed of Knowledge Acquisition" contributed significantly to the model (p < .01). The results of t-Test indicating the significance of regression coefficients show that "Speed of Knowledge Acquisition" contribute to the model more than "Knowledge Construction and Modification" (3.626 > 3.004).

Table 16

*The Results of Multiple Regression Analysis with Regard to the Prediction of Learning and Communication Strategies by the Dimensions of Epistemological Beliefs*

| Dependent Var. | Independent Var. | B | Standard Error | Beta | T | p |
|---|---|---|---|---|---|---|
| | Constant | 2.341 | .429 | | 5.457 | .000 |
| | A | -.033 | .059 | -.048 | -.568 | .571 |
| b | B | .272 | .101 | .245 | 2.694 | .008 |
| | C | -.015 | .082 | -.015 | -.180 | .858 |
| | D | -.069 | .098 | -.063 | -.698 | .486 |
| | E | .092 | .064 | .119 | 1.429 | .155 |
| Multiple R = .247 | $R^{2=}$ .061 | | | | | |
| Adj. $R^2$= .030 | F(5,154) = 1.940 | p = .091 | | | | |

Table 16 shows the results of regression analysis demonstrating how the five dimensions of epistemological beliefs predict the fourth language learning theme "Learning and Communication Strategies". The table indicates that the independent variables in the model predict the dependent variable "Learning and Communication Strategies" significantly (R= .286, $R^2$ = .082, $p < .05$). As can be seen from the table, only the dimension "Knowledge Construction and Modification" contributed to the model significantly ($p < .01$).

Table 17 demonstrates the results of multiple regression analysis demonstrating how the five dimensions of epistemological beliefs predict the fifth language learning theme "Motivations and Expectations". According to the results in the table, the regression model is insignificant ($p > .05$) even though the dimension "Knowledge Construction and Modification" predicts the language learning theme "Motivations and Expectations" significantly ($p < .01$).

Table 17

*The Results of Multiple Regression Analysis with Regard to the Prediction of Motivations and Expectations by the Dimensions of Epistemological Beliefs*

| Dependent Var. | Independent Var. | B | Standard Error | Beta | T | p |
|---|---|---|---|---|---|---|
| | Constant | 2.708 | .468 | | 5.781 | .000 |
| | A | .037 | .064 | .049 | .574 | .567 |
| e | B | .295 | .110 | .243 | 2.669 | .008 |
| | C | -.050 | .089 | -.048 | -.558 | .577 |
| | D | -.036 | .107 | -.030 | -.334 | .739 |
| | E | .012 | .070 | .015 | .178 | .859 |

Multiple R = .255 $R^{2=}$ .065
Adj. $R^2$= .033 F(5,154) = 2.065 p = .073

In short, the regression models predicting the themes “Foreign Language Aptitude”, “The Nature of Language Learning”, and “Learning and Communication Strategies” have been found significant while the dimensions of epistemological beliefs predicted the themes “The Difficulty of Language Learning” and “Motivations and Expectations” insignificantly. In the first significant regression model, the dimensions of epistemological beliefs explained 9.9% of the total variance in the theme “Foreign Language Aptitude” ($R^2$ = .099). In the second significant regression model, the dimensions of epistemological beliefs explained 20.5% of the total variance in the theme “The Nature of Language Learning” ($R^2$ = .205). In the last significant regression model, the dimensions of epistemological beliefs explained 8.2% of the total variance in the theme “Learning and Communication Strategies” ($R^2$ = .082). It is also worth noting that the dimension “Knowledge Construction and Modification” was found to be significant in all the regression models. Other than statistical explanations, these results mean that the students’ epistemological beliefs as a whole does not seem to affect the students’ beliefs about the difficulty of language learning and motivation to learn languages. On the other side, the students’ epistemological beliefs seemed to affect how the students felt about the role of language aptitude, how languages are learned, and the strategies for language learning.

# CHAPTER V

# DISCUSSION AND CONCLUSION

## 5.1. Introduction

The current study has sought answers to three research questions and the interpretation of these research questions in the light of the findings will be made in this chapter. This chapter also concludes with the implications and limitations of the study.

## 5.2. The Discussion of the Findings with Reference to Research Questions

- *What are the epistemological beliefs which the language learners in Fırat University in Turkey hold?*

The epistemological beliefs of the students were questioned under five dimensions: Speed of Knowledge Acquisition, Structure of Knowledge, Knowledge Construction and Modification, Characteristics of Successful Students, and Attainability of Truth. The responses given to each item demonstrated whether the students had naïve or sophisticated beliefs about the statement and thus the underlying structure. In the first factor "Speed of Knowledge Acquisition", which relates to how quick knowledge acquisition happens, the students' responses to the items in the questionnaire showed that the students did not believe in quick learning, valued working long on problems, thus believed in changing and gradual acquisition of knowledge through integration. The total mean value and the results of the interview question also yielded sophisticated results.

The sophistication in speed of knowledge acquisition, namely belief in gradual learning/ learning effort, has been explained by previous research. Numerous studies in literature have linked gradual learning to better academic performance. For example; Schommer (1993a) proved belief in gradual learning to be related to more academic success and a better academic performance. There are also studies (Chan, 2007; Kardash & Howell, 2000; Metallidou, 2013; Schommer, 1990; Winne, 1995) displaying a concrete relation between the speed of knowledge acquisition and cognitive processes. It was found out that belief in quick learning results in fewer and shallow cognitive processes. There are also studies (Paulsen & Feldman, 2005; Schommer & Easter, 2008) revealing the relation between belief

in quick learning and affective issues in the learning process. The related research showed that belief in quick learning causes low motivation, high anxiety, less control over learning in students and less appreciation of the value of learning tasks. All these previous studies explicate well what it might lead to and means for the students in this study to have sophisticated beliefs as to the speed of knowledge acquisition. Namely, the fact that the students were found to hold sophisticated beliefs is supposed to bring about cognitive and affective processes supporting positive learning processes and outcomes according to previous research.

In the second factor "Structure of Knowledge, which is about the complexity, clarity, and certainty of knowledge, the results of the questionnaire showed that the students were in favor of simple and clear knowledge. As for the certainty of knowledge, they seemed unsure to expect uncertain results. However, they were in favor of effort made on problems with uncertain results. The total mean value of the dimension was also slightly on the naïve side. Interview results, on the other hand, proved that the students preferred complex-natured knowledge and valued effort. The overall results demonstrated that the students valued effort spent on the way to reaching the knowledge even though they believed in the simplicity and clarity of knowledge. Furthermore, the fact that the students valued effort made on problems with unclear results complies with their belief in gradual learning.

Although the analysis of the findings from the questionnaire showed that the students had a belief in knowledge which is simple and clear, the overall findings revealed that according to the students, knowledge can be complex at the same time and thus enough effort should be spent during the process of knowledge acquisition. Considering the findings from other research, this finding is significant since belief in complex knowledge was associated with many qualifications related to success in learning. For example, belief in complex knowledge was found out to lead to metacognitive understanding (Schommer, Crouse & Rhodes, 1992), the use of deeper processing strategies (Hofer & Pintrich, 1997), flexible and reflective thinking (Schommer & Hutter, 2002), self-regulation in learning (Dahl, Bals & Turi, 2005) and confidence and intrinsic motivation (Paulsen & Feldman, 2005).

For the next factor "Knowledge Construction and Modification", which questions whether knowledge has a changing nature and how change occurs, the questionnaire results showed that the students supported personal construction of knowledge, integration of

information into personal scheme, and changing nature of knowledge. Interview results also revealed that all the students believed in the evolving nature of knowledge. The total mean value also supported sophisticated results in the questionnaire and interview questions.

The studies in the past shed light on how belief in changing or unchanging knowledge could relate to or affect the process of knowledge acquisition. There have been studies demonstrating the relation between belief in changing knowledge and the qualifications needed for successful learning. For instance; Schommer and Hutter (2002) revealed that the students who believed in the changing nature of knowledge recognized various aspects of an issue. Other studies (Chan, 2007; Paulsen & Feldman, 2005; Metallidou, 2013) have proved belief in absolute knowledge to be associated with the qualifications which are likely to result in unsuccessful learning. These studies revealed that belief in unchanging knowledge led to a passive understanding of knowledge and concrete learning, more likeliness to perceive internal control over learning, and less evaluation of the quality of the learning outcomes. In short, the students in this study who believes in changing nature of knowledge, according to the previous research, are expected to develop qualifications leading to successful learning as to the construction of knowledge such as more evaluation of the quality of the learning outcomes.

In the fourth factor “Characteristics of Successful Students”, which mainly focuses on the existence of innate ability, the students rejected an understanding of innate and fixed ability therefore valued effort and time in their responses to the questionnaire items. The total mean value of the dimension and the interview questions confirmed the sophisticated results as well. The sophistication in the belief whether innate ability exists is enlightened by the previous research. Several studies attempted to find the association between belief in innate ability and motivational elements. For example; Paulsen and Feldman (2005) associated belief in fixed ability with less likeliness to demonstrate intrinsic and extrinsic motivations, to appreciate the value of learning tasks, to have confidence in personal capacity, and to perceive internal control of learning. A number of studies (Chan, 2007; Dahl, Bals, & Turi, 2005; Metallidou, 2012; Schommer & Walker; 1997) also found connections between belief in fixed ability and cognitive processes. The findings proved such belief related to belief in no personal change or social growth by learning, self-regulation in learning, less apprehension of what it means to succeed or fail at school, less value of education, and less

importance put on persistence during hardships. For this particular study, it can be concluded then that the participants would be expected to be more likely to display appropriate motivational and cognitive characteristics related to successful learning.

The last factor "Attainability of Truth" questions the existence of an objective truth and whether one can reach that objective truth. The analysis of the findings in this part of the study showed that the participants were uncertain about the existence and acquisition of objective truth. This might be interpreted as a positive conclusion as there is literature arguing that belief in certainty of knowledge is connected to surface learning (Chan, 2007). Similarly, Schommer and Walker (1997) found out that belief in certain knowledge were associated with overconfidence in abilities.

Epistemological beliefs as a whole structure have been proved to affect learners and learning process by many studies. A better understanding of epistemological beliefs as a predictive element might answer many questions in learning environments. The first research question in this study has attempted to capture a detailed analysis of the epistemological beliefs the participants held.

- *What are the language learning beliefs these language learners have?*

The learning beliefs of the students were investigated under five themes: The Difficulty of Language Learning, Foreign Language Aptitude, the Nature of Language Learning, Learning and Communication Strategies, and Motivations and Expectations. For the first theme "the Difficulty of Language Learning", which mainly aims to reveal how difficult the students perceive language learning, the students perceived English to be of medium difficulty. Horwitz (1988) expressed that students' perceptions as to the difficulty of language learning were related to their expectations and commitment. The students who rate the process as easy and quick are to be frustrated when the reality do not match. On the other hand, a perception of the process as needing extraordinary amount of time might lead to discouragement and little efforts spent. Considering this argument, we can infer that the participants who found English neither too difficult nor easy to learn would be effective in maintaining their motivation and effort in learning English.

In the second theme "Foreign Language Aptitude", which questions the existence of an innate ability for learning languages, the students did not believe in foreign language aptitude

and thought that everyone can learn a language. According to Horwitz (1988), a student who believes that some people are less able to learn languages will be likely to have negative expectations about their own capacity. Therefore, it is possible to indicate that the students here are likely to have a positive perception of their own capacity in general. This can be interpreted as a sign of expectation for success.

The third theme investigated was about "The Nature of Language Learning". The participants were mainly asked for their opinions about how languages are learned. According to the participants, language learning is a matter of learning new vocabulary. They did not consider grammar or translation as the focus of their language learning practices. Horwitz (1988), with regard to the matter, warned that such a restricted belief focusing on vocabulary would lead students to neglect other learning tasks and spend a great amount of time memorizing vocabulary lists. As for the students' being in less favor of grammar or translation, Horwitz (1999) assumes that the learners might have already spent plenty of time studying grammar or translating and consequently they might not be satisfied with the level of achievement that comes with these methods. Another important result in this theme was that the students believed in the effectiveness of living in a foreign country for learning a foreign language. Tanaka (2004) discovered that the students who experienced learning a language in the target country came to realize that living in an English-speaking country did not correspond to automatic proficiency. The same study also proved that learning the foreign language in the foreign country did not bring about improvement in fluency. That is, the unrealistic view that living in the foreign country automatically leads to proficiency in the language has been proved wrong by previous research. However, the same study has also concluded that the learning abroad experience has helped the learners monitor their progress better and recognize how crucial their efforts were. It can be inferred from Tanaka's study that the participants here relying on living in a foreign country have unrealistic views and might underestimate the power of their personal efforts as living in a foreign country is preferred for language learning.

In the next theme "Learning and Communication Strategies", which reflects well the students' language learning routines, the students endorsed repetition and practice and they appreciated classroom learning since they believed these to result in a more complete learning. The students here were also in favor of multiple trials and guesses. Lastly, the

students thought that the mistakes should be avoided as soon as possible and the accent while speaking should be excellent. They supported repetition, practice, and multiple trials as they perceived these as a bridge to a complete and mistake-free language learning. This might be accepted as an effective learning strategy since according to Cotterall (1999) and Peacock (1999), perceiving mistakes as natural part of language learning is an essential component of learners' autonomy. Thus it can be assumed that the participants of the study are consciously employing practice strategies which are believed to contribute to a more developed language proficiency.

For the last theme "Motivations and Expectations", which is related to the students' expectations about learning their target language, it has been found that the students had instrumental motivation rather than the integrative one. Even though the trend in the previous research is to defend integrative motivation against instrumental purposes, Horwitz (1988) indirectly contradicted this idea stating that having moderate level of either of these types of motivation could result in quitting language study as soon as difficulty is encountered. Gardner and MacIntyre (1991) strengthened this contradiction asserting that both types of motivation mentioned here did not differ in forcing the students in order to reach the ultimate goal, language learning in the current case. The students' strong instrumental motivation, which has not been found detrimental to language learning, and their opinions mentioned in the previous themes that they could ultimately learn their target language as everyone could indicate these students' positive attitude and expectations towards language learning.

- *What is the relationship between these two types of beliefs?*

Even though the findings of the first two research questions are significant, the main focus of this study has been to understand the relationship between epistemological and language learning beliefs, if there is any.

The results of correlation and regression analyses demonstrated that epistemological and language learning beliefs did not relate to each other strongly. Only minor correlations have been found. "Attainability of Truth" was positively correlated with "Foreign Language Aptitude". Such a relationship would make sense as both of the structures involve beliefs about fixed notions (the objective truth and language aptitude). "Knowledge Construction and Modification" was positively correlated with all the five themes of language learning

beliefs. As language acquisition is a form of knowledge acquisition, it is not surprising to find similar patterns between the beliefs about how knowledge is constructed and language learning beliefs. “The Nature of Language Learning” was also positively correlated with “Characteristics of Successful Students”, “Speed of Knowledge Acquisition”, and “Structure of Knowledge”. It is plausible to have some connections between the beliefs about the nature of language learning, which is a form of knowledge acquisition and the beliefs about the nature of good learning, the time requirements of learning, and how knowledge is structured. The finding of only minor correlations might support the specificity of the language learning domain. In relation to this point, Mori (1999) argues that the use of tasks in language learning process lead students to form domain-specific beliefs while epistemological beliefs are higher-order and more abstract structures.

The lack of correlation between epistemological beliefs and language learning beliefs might also be the proof for Schommer’s view (1994) that general epistemological beliefs are domain independent. That is, the epistemological beliefs the students hold exist no matter whether the learning beliefs are correlated.

### 5.3. The Implications of the Study

The lack of major correlations and the existence of minor correlations between the two types of beliefs imply that epistemological and language learning beliefs must be assessed separately in designing learning settings and practices and the development of sophisticated epistemological beliefs will also improve the language learning beliefs if there is any connection as beliefs are a contributory element in the process of learning and success (Breen, 2001).

The previous research investigated throughout this study demonstrate that epistemological beliefs influence how students learn, how instructors teach, and how teachers’ own beliefs, practices and other educational factors shape students’ learning experiences. The previous studies also prove that epistemological beliefs affect or even determine many different educational factors such as motivation. In order to help learners become aware of their epistemological beliefs and also to contribute to their improvement, Hofer (2001), therefore, recommends a curriculum which recognizes the student as the knower, create situations in which students can make meaning, and give students the chance

to make meaning with others. Once the importance of epistemological beliefs is understood by the education designers and teachers, the practices which foster epistemological development will hopefully take their place in educational settings. This study, we believe, contributes to the current literature by revealing the potential relation between epistemological and language learning beliefs within our particular EFL context.

### 5.4. The Limitations of the Study and Suggestions to Further Research

Given the number of the participants in the sample, who were one hundred and fifty language learners in Fırat University, compared to the whole population, namely language learners in Turkey, the findings of the study might not be representative under all circumstances. Research with larger samples will certainly become more comprehensive. Furthermore, the contextual uniqueness of the sample in the study, which were made up of preparation year students with average academic background, demands great caution concerning the use of its findings in different contexts.

Methodologically, the adding of some items based on epistemological assumptions could have established new relations. The use of a language learning beliefs questionnaire with items based upon epistemological beliefs leaves an open door for further research. For example; adding new items which question how integration of linguistic knowledge takes place or more specific items as to the speed of language learning process could result in more explanatory results. Thus, the findings of the current study might function as a background for further studies in future.

The data of the study is mainly based upon quantitative sources. Even though the students were interviewed for a better understanding, additional qualitative data collection methods such as observations and data analysis methods such as discourse analysis could explain better subtle concepts, which are in this case beliefs. Furthermore, a longitudinal study could provide a more reliable dataset for further research.

Finally, this study perceived epistemological beliefs as the predictor variable and language learning beliefs as the affected one since the purpose of this particular study was to investigate through the influence of a higher belief system, namely personal epistemology, on language learning beliefs. However, language learning beliefs might influence the formation or development of epistemological beliefs as well since they have been found to

relate to many constructs by the previous research examined in this study. Such reverse relationship could be base for further research.

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# APPENDICES

**Appendix 1:** The Survey Consisting of Epistemological Beliefs Questionnaire by Wood and Kardash and BALLI by Horwitz

## ANKET BİLGİLENDİRMESİ

Bu anket, üniversite öğrencilerinin bilgi, bilginin kazanımı ve dil öğrenimi hakkındaki görüş ve inançlarını ortaya çıkarmak için hazırlanmıştır. Anket, bu sayfadaki genel bilgiler, bilgi ve bilgi kazanımına dair sorular ve dil öğrenimine dair sorulardan oluşmaktadır.

Bu anket ile toplanan bilgi, öğrencilerin bilgi ve bilgi kazanımına dair inançlarının, dil öğrenme inançları ile ilişkisi olup olmadığını incelemek için kullanılacaktır. Elde edilen veriler, isim yazılmamış anketlerden elde edildiği için hangi katılımcının hangi cevapları verdiği bilinmeyecektir. Bu nedenle ankette verilen cevapların gerçekten katılımcının hissettiği ve doğru olduğunu düşündüğü cevaplar olması çalışmanın başarısı açısından önemlidir. Anketin doldurulup teslim edilmesi ankete katılma konusunda gönüllülük göstergesidir.

## GENEL BİLGİLER

**1.** Cinsiyet: Kız ( ) Erkek ( )

**2.** Yaş: 16-20 ( ) 21-25 ( ) 26-30 ( ) 30+ ( )

Bu anketi doldurduktan sonra anketi uygulayan araştırmacıya konuya dair daha ayrıntılı cevaplar vermek üzere en fazla yarım saat olacak şekilde zaman ayırabileceğinizi düşünüyorsanız lütfen aşağıdaki boşluğa isim-soy isim ve öğrenci numaranızı yazınız. Teşekkürler

*_____

ARAŞTIRMACI

OKUTMAN YAVUZCAN DERE

**Bilgi ve bilgi kazanımına dair inançlar**

Bu bölümde bir öğrencinin bilginin kendisi ve bilginin edinimi hakkındaki görüşleri soruluyor. Lütfen soruları okuduktan sonra hiç katılmıyorsanız 1'i, kısmen katılmıyorsanız 2'yi, emin değilseniz 3'ü, az katılıyorsanız 4'ü, tamamen katılıyorsanız 5'i işaretleyin. Her soruda sadece bir seçeneği işaretleyin. Lütfen soruları bütün samimiyetinizle cevaplayın ve emin olmadığınız sorularda 3'ü işaretlemeyi ihmal etmeyin.

| SORU NO | SORULAR | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 1. | Okuduğumuz şeylerin çoğuna inanabiliriz. | | | | | |
| 2. | Kesin olan tek şey belirsizliktir (kesin olmama durumu). | | | | | |
| 3. | Eğer bir şey öğrenilebiliyorsa hemen (kısa zamanda) öğrenilir. | | | | | |
| 4. | Bilginin açık seçik bir şekilde sunulmasını severim; saklı anlamı (ima edileni) bulmayı sevmem. | | | | | |
| 5. | Baştan başlayıp her seferinde bir bölümünü öğrenmedikçe ders kitabından öğrenmek zordur. | | | | | |
| 6. | Kendi fikirlerini oluşturmak, ders kitaplarının söylediği şeyleri öğrenmekten iyidir. | | | | | |
| 7. | Bir ders kitabından öğrenebileceğin bilginin neredeyse tamamını ilk okuma esnasında edinirsin. | | | | | |
| 8. | Bir ders kitabını anlamanın iyi bir yolu, kitaptaki bilgiyi kendi kişisel birikimine uydurmaktır. | | | | | |
| 9. | Eğer bilim insanları yeterince çabalar ise hemen hemen her soruya cevap bulabilirler. | | | | | |
| 10. | Eğer ders kitabındaki konuya aşina iseniz oradaki bilginin doğruluğunu değerlendirmelisiniz. | | | | | |
| 11. | Bir konuyla ilgili zaten var olan bilginiz ile bir ders kitabındaki bilgiyi birleştirmeye/ harmanlamaya çalışırsanız sadece kafanız karışır. | | | | | |
| 12. | Ders çalışırken belirli örneklere (örnek olaylara) ihtiyacım olur. | | | | | |
| 13. | Öğretmenler gerçeklere/ örneklere daha çok odaklanıp teori kısmını daha az kullansalardı, bir öğrenci üniversiteyi daha çok kazanımla bitirirdi. | | | | | |
| 14. | Genellikle iyi bir öğrenci olmak demek birçok olguyu / bilgiyi ezberlemek demektir. | | | | | |
| 15. | Bilgelik cevapları bilmek değil, cevapları nasıl bulacağını bilmektir. | | | | | |
| 16. | Zor bir problem üzerinde çok uzun bir süre çalışmak sadece zeki öğrencilere başarı getirir. | | | | | |
| 17. | Bazı insanlar iyi bir öğrenici olarak doğar, bazıları ise bu konuda kısıtlı yeteneğe sahiptir. | | | | | |

| SORU NO | SORULAR | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 18. | Genelde bir şeyi anlayacağınız varsa ilk seferde anlarsınız. | | | | | |
| 19. | Başarılı öğrenciler daha çabuk anlarlar. | | | | | |
| 20. | Bugünkü gerçekler yarın kurguya dönüşebilir (gerçekliğini yitirebilir). | | | | | |
| 21. | Derslerini dikkatlice planlayıp sonra da o plana sıkıca uyan öğretmenleri takdir ediyorum. | | | | | |
| 22. | Bilimsel çalışmanın en önemli kısmı orijinal / özgün düşüncedir. | | | | | |
| 23. | Uzmanlardan gelen tavsiyeler bile sorgulanmalıdır. | | | | | |
| 24. | Eğer bir şeyi hemen anlayamıyorsam genellikle o şeyi hiç anlayamayacağım demektir. | | | | | |
| 25. | Dersin farklı bölümleri hatta farklı derslerdeki bilgileri kafamda birleştirmek için elimden geleni yapıyorum. | | | | | |
| 26. | Sonu net olmayan filmleri sevmem. | | | | | |
| 27. | Bilim insanları günün birinde gerçeğe ulaşabilirler. | | | | | |
| 28. | Net bir cevabı olmayacak problem üzerinde çalışmak zaman kaybıdır. | | | | | |
| 29. | Başarılı öğrenciler için ana fikirleri anlamak kolaydır. | | | | | |
| 30. | Düşünceleri konusunda kararlı olmayan öğretmenlerin dersini dinlemek sinir bozucudur. | | | | | |
| 31. | İyi bir öğretmenin işi, öğrencilerin hedefe giden yoldan sapmalarını engellemektir. | | | | | |
| 32. | Hangi durumda söylendiği bilinmedikçe bir cümle pek bir anlam ifade etmez. | | | | | |
| 33. | Fen derslerinin(kimya, biyoloji ve fizik) en güzel tarafı çoğu problemin sadece bir doğru cevabı olmasıdır. | | | | | |
| 34. | Çoğu kelimenin sadece bir tane net anlamı vardır. | | | | | |
| 35. | Gerçekten zeki olan öğrencilerin okulda başarılı olması için çok çalışmasına gerek yoktur. | | | | | |
| 36. | Bir şey öğrendiğim zaman mümkün olduğu kadar basit öğrenmeyi tercih ederim. | | | | | |
| 37. | Uzmanların ortak bir nokta bulamadığı sorunlar üzerine düşünmek beni canlandırıyor (mutlu ediyor). | | | | | |
| 38. | Okulda öğrendiğimiz bilgiler kesin ve değişmezdir. | | | | | |

**Yabancı dil öğrenimine dair inançlar**

Bu bölümde bir öğrencinin yabancı dil öğrenimi hakkındaki görüşleri soruluyor. Lütfen soruları okuduktan sonra hiç katılmıyorsanız 1'i, kısmen katılmıyorsanız 2'yi, emin değilseniz 3'ü, az katılıyorsanız 4'ü, tamamen katılıyorsanız 5'i işaretleyin. Her soruda sadece bir seçeneği işaretleyin. Lütfen soruları bütün samimiyetinizle cevaplayın ve emin olmadığınız sorularda 3'ü işaretlemeyi ihmal etmeyin.

- **42. soruda** 1 den 5 e ne kadar yüksek puan seçilirse o kadar zordur demektir.
- **52.soruda** doğru kabul ettiğiniz cevabın solundaki kutucuğu işaretleyin.

| SORU NO | SORULAR | | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|---|---|
| 39. | Çocuklar, bir yabancı dili yetişkinlerden daha kolay öğrenir. | | | | | | | |
| 40. | Bazı insanlar yabancı dil öğrenmeyi kolaylaştıran özel bir yetenekle doğarlar. | | | | | | | |
| 41. | Bazı diller diğerlerine kıyasla daha kolay öğrenilir. | | | | | | | |
| 42. | Şu an öğrenmeye çalıştığım dil; | Çok kolay | | | | | | Çok zor |
| 43. | Şu an öğrenmeye çalıştığım dilin yapısı Türkçe ile aynıdır. | | | | | | | |
| 44. | Şu an öğrendiğim dili günün birinde çok iyi konuşacağıma inanıyorum. | | | | | | | |
| 45. | Bir yabancı dili mükemmel bir aksanla konuşmak çok önemlidir. | | | | | | | |
| 46. | Yabancı bir dili konuşmak için o dile ait kültürü bilmek gerekir. | | | | | | | |
| 47. | Yabancı dilde bir şeyi doğru söyleyene kadar söylememek gerekir. | | | | | | | |
| 48. | Bir yabancı dili konuşanların ikinci bir dili öğrenmesi daha kolaydır. | | | | | | | |
| 49. | Yabancı bir dili, ana dil olarak konuşulduğu ülkede öğrenmek daha iyidir. | | | | | | | |
| 50. | Öğrenmeye çalıştığım yabancı dili konuşan birini duysam konuşup pratik yapabilmek için yanına giderim. | | | | | | | |
| 51. | Yabancı dilde bir kelimenin anlamı bilinmiyorsa tahmin etmek normaldir. | | | | | | | |

52. Birisi günde bir saat yabancı dil çalışsa o dili akıcı şekilde konuşması ne kadar sürer?

☐ Bir yıldan az ☐ 1-2 yıl ☐ 3-5 yıl ☐ 5-10 yıl

☐ Günde bir saat çalışmayla dil öğrenilmez

| SORU NO | SORULAR | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 53. | Yabancı dil yeteneğim var. | | | | | |
| 54. | Yabancı dil öğrenmek, çoğunlukla birçok yeni kelime öğrenmek demektir. | | | | | |
| 55. | Bol miktarda tekrar ve pratik yapmak önemlidir. | | | | | |
| 56. | Diğer insanların önünde yabancı dil konuşurken utanıyorum. | | | | | |
| 57. | En baştan hatalar düzeltilmezse daha sonra onlardan kurtulmak zor olacaktır. | | | | | |
| 58. | Yabancı dil öğrenmek, çoğunlukla birçok gramer kuralı öğrenmek demektir. | | | | | |
| 59. | Yabancı dili, dil sınıfında öğrenmek önemlidir. | | | | | |
| 60. | Kadınlar yabancı dil öğrenme konusunda erkeklerden daha iyidir. | | | | | |
| 61. | Öğrendiğim dili çok iyi konuşabilirsem bu dili kullanabileceğim çok fırsat olacak. | | | | | |
| 62. | Yabancı bir dili konuşmak anlamaktan daha kolaydır. | | | | | |
| 63. | Yabancı dil öğrenmek okuldaki diğer derslerden farklıdır. | | | | | |
| 64. | Yabancı bir dil öğrenmek, kendi dilinden o dile çeviri yapmak demektir. | | | | | |
| 65. | Öğrenmeye çalıştığım dili çok iyi konuşmayı öğrenirsem iyi bir iş bulmama faydası olacak. | | | | | |
| 66. | Bir dilde okuyup yazabilmek o dili konuşup anlamaktan daha kolaydır. | | | | | |
| 67. | Matematik ve fende iyi olan insanlar, yabancı dil öğrenmek konusunda iyi değildir. | | | | | |
| 68. | Türkler yabancı dil konuşmanın önemli olduğunu düşünürler. | | | | | |
| 69. | Şu an öğrendiğim yabancı dili, o dili konuşanları daha iyi tanımak için öğrenmek istiyorum. | | | | | |
| 70. | Birden fazla dili iyi bir şekilde konuşanlar çok zekidir. | | | | | |
| 71. | Türkler yabancı dil öğrenme konusunda iyidir. | | | | | |
| 72. | Herkes yabancı bir dil konuşmayı öğrenebilir. | | | | | |

Katılımınız için teşekkürler ...

**Appendix 2:** Permission from the management of Foreign Languages School

Evrak Tarih ve Sayısı: 13/03/2017-191626

T.C.

**FIRAT ÜNİVERSİTESİ REKTÖRLÜĞÜ**

Yabancı Diller Yüksekokulu Müdürlüğü

Sayı :39345886/100/
Konu :Akademik Çalışma (Okt. Yavuzcan DERE)

MÜDÜRLÜK MAKAMINA

Yüksekokulumuz Okutmanı Yavuzcan DERE'nin 10/03/2017 tarihli dilekçesinde bahsi geçen 13/03/2017 - 31/03/2017 tarihleri arasında farklı iki günde birer ders saatinde olmak üzere akademik çalışma yapması hususunu olurlarınıza arz ederim.

e-imzalıdır.
Nurten TUNCEL
Yüksekokul Sekreteri

OLUR

e-imzalıdır.
Prof.Dr. İhsan DAĞTEKİN
Yüksekokul Müdürü

**Appendix 3:** Interview Consent Form

**Consent Form**

I participate in this interview entirely voluntarily. I have been fully informed about the study and I give my consent to the researcher, Yavuzcan Dere, to use the information obtained for any purpose related to the aims that I have been informed about. I also give my consent provided that I remain anonymous at all times.

Date : ……..

Name: ……

Signature.: …….

# CURRICULUM VITAE

**Personal Information**

**Name & Surname** **:** Yavuzcan DERE

**Place & Date of Birth** **:** Malatya – 01.04.1991

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**Educational Background**

**2015-2017** **:** MA, Çukurova University, Institute of Social Sciences, English Language Teaching Department

**2008-2012** **:** BA, Marmara University, Faculty of Education, English Language Teaching Department

**Work Experience**

**2011-2013** **:** Trainee Teacher at Justenglish Language Schools, Istanbul, Turkey

**2011-2012** **:** Lecturer / Instructor at Marmara University (five months), Istanbul, Turkey

**2013- Present** **:** Lecturer / Instructor at Fırat University, Elazığ, Turkey