

# **Bilingual Education Teachers' Beliefs and Their Relation to Self-Reported Practices**

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## **Abstract**

This exploratory survey study investigated teachers' beliefs about the nature of knowledge and how these beliefs influenced self-reported practices. An epistemological framework was used to explore these bilingual teachers' beliefs ( $N = 176$ ). A bi-methodological approach was used to analyze the data. Themes for open-ended responses were identified and triangulated with descriptive findings. Multivariate analysis determined the relationships between variables. Findings demonstrated that bilingual teachers have specific beliefs about how bilingual children learn. Results indicated that prior experiences do influence bilingual teachers' beliefs, especially professional teaching. A theoretical, philosophically grounded teacher preparation program is considered vital in the preparation of effective teachers, for there to be a congruity between beliefs and practices. Lastly, to understand classroom realities, the exploration of teachers' beliefs, formations of beliefs, and the influence of beliefs on teaching practices must continue.

Why do teachers teach the way they do? This is a compelling question that has perplexed teacher educators. Many researchers have assumed that teachers' approaches to teaching have been influenced by the way that they were taught. Some researchers have demonstrated that teachers have implicit theories of teaching and learning. These researchers have suggested that teachers' implicit theories influence their approaches to teaching. This brings us to another esoteric question. Why are some teachers more effective than others? Perhaps there may be certain essential beliefs that underlie the practices of teachers; furthermore, certain experiences may reinforce these beliefs.

Undeniably, bilingual teachers play a vital role in the cognitive development of their students. A review of dissertation abstracts revealed that bilingual education teachers are supportive of bilingual children's cognitive development (see Wood, 1994; Quintanar-Sarellana, 1991; Serna, 1990; Martínez, 1989; P. Pérez, 1988). Shin & Krashen's (1996) pilot study on teacher

attitudes indicated that bilingual teachers are supportive of the principles underlying bilingual education. Other studies that explicitly examined bilingual teachers' practices showed that they employ effective strategies for language minority students (García, 1988, 1991, 1996; Jiménez, Gersten, & Rivera, 1996; Tikunoff, 1983).

These aforementioned studies are important in understanding teacher behavior and attitudes towards bilingualism, cognition, and bilingual education. However, Sosa (1996) apprised researchers that some of the effective bilingual teacher research has been limited, because only low inference (i.e., measurable) behaviors have been examined. Presage variables such as teacher beliefs have not been adequately examined in relation to bilingual teacher behavior. Sosa suggested that these beliefs often propel teachers to utilize a variety of approaches while assisting students' learning.

To understand the underpinnings of teachers' beliefs, a socioconstructivists' framework is assumed in which knowledge is constructed and mediated within sociocultural contexts. Gonzalez (1997) also assumed a socioconstructivist posture when analyzing teachers' beliefs. From this ideology, we recognize that knowledge is constructed on two mental planes, that is, interpsychological and intrapsychological (Vygotsky, 1978). At the point when knowledge construction becomes intrapsychological, some would retain the notion that it is still quasi-social (Shotter, 1993, 1999; Wertsch, 1991). Our quintessential ideas, beliefs, and conceptualizations are formulated from experiences we have had within a sociocultural context. For example, our beliefs about the world are given to us through our familial and educational experiences. In essence, the social structure becomes the mechanism for modeling expectations and standards of the norms of a given community or society.

Greeno (1989) proposed that individuals have implicit theories of intelligence, knowing, and learning. That is, what we think about the nature or origin of knowledge may influence our view of ourselves and others as learners. In the case of teachers, beliefs about how others learn may be socially constructed from theoretical and philosophical ideologies as epistemological beliefs. Epistemological beliefs are implicit or intuitive beliefs or theories about the nature of knowledge, knowing, and learning (Schommer, 1990). Five dimensions have been proposed: (a) certainty of knowledge, (b) control of knowledge acquisition, (c) source of knowledge, (d) speed of knowledge acquisition, and (e) structure of knowledge acquisition (Schommer, 1990). Schommer's notions of structure, certainty, and source of knowledge were based on the work of Perry (1968). Perry found that college students viewed knowledge as being simple, certain, and transmitted by experts (as cited by Schommer). Schommer derived the notion of control from Dweck's research on the nature of intelligence (i.e., incremental and entity) and motivation as well as on Schoenfeld's work on control. Schommer's notion of speed originated from the work of Schoenfeld in which he suggested that students appear to predetermine the amount of time allotted for the acquisition of certain

knowledge. If new knowledge is not acquired by the set time, then learners believe that they will never understand the concepts.

Interestingly, Schommer's (1990) dimensions of epistemology are evident in the studies about teachers' beliefs about teaching and learning (see Ames, 1992; Kember & Gow, 1994; Rueda & García, 1996; Samuelowicz & Bain, 1992). Furthermore, as Fox (1983) noted, "There are also many teachers who have hardly progressed beyond a simple view of learning because it is consistent with their own simple theories of teaching" (p. 159). For example, teachers' beliefs about their role and the learner's role in learning can be characterized as Schommer's (1990) source of knowledge. Teachers' beliefs that learning is either absolute or relative can be classified as Schommer's (1990) certainty of knowledge. Teachers' beliefs of how the process of learning occurs are reflective of Schommer's (1990) notions of structure and speed. The teachers' beliefs regarding ability to learn can be classified as Schommer's (1990) control of knowledge dimension. Although Schommer's work has been criticized (Hofer & Pintrich, 1997), Hofer and Pintrich conceded:

Schommer's central contributions have been in three areas: (a) suggesting that epistemological beliefs may be a system of dimensions that are relatively independent of one another, (b) initiating an empirical investigation of the study of several proposed dimensions, and (c) initiating an important and insightful line of research that links epistemological beliefs to issues of academic classroom learning and performance. (p. 108)

Seemingly, the review of literature on teachers' beliefs supports Schommer's (1990) dimensions (the complete review of literature can be found in the dissertation). Thus, the researcher proposes the following adaptations to Schommer's epistemological framework for understanding teachers' beliefs. This framework has been previously employed in a case study (Flores, 2000). "Certainty of knowledge acquisition" is the teacher's belief of knowledge as either being dualistic or relative. The "control of knowledge acquisition" is the teacher's beliefs of learning as either being perceived from an incremental or entity perspective. The "speed of knowledge acquisition" is the teacher's beliefs relative to the predetermined amount of time required for learning. The "source of knowledge acquisition" is the teacher's beliefs concerning his/her role as either being a facilitator or a provider of knowledge. Depending on how the "structure of knowledge acquisition" is perceived, the teacher will believe that learning is simple or complex.

Consistent with the literature on the unique role of bilingual teachers (Felix-Holt & González, 1999; Lemberger, 1996; Jiménez, Gersten, & Rivera, 1996; Martínez & Moore-O'Brien, 1996), the researcher derived a sixth epistemological dimension from a Vygotskian framework (Flores, 1999, 2000). Vygotsky (1978) noted that language and culture are symbiotic tools used in the mediation of knowledge. This "interaction of knowledge acquisition" dimension is defined as the teacher's beliefs regarding the interactive processes of language, culture,

and thought. Teachers who believe that there is interplay among language, culture, and thought will employ these as symbiotic tools in the creation of knowledge. Shotter (1993) argued that this is a two-way process with individuals' backgrounds giving structure to their way of talking and with ways of talking lending form to their world. Through daily dialogue, joint activity, and negotiation, social cognition is distributed and situated within the context (Lightbrown & Spada, 1999; Shotter, 1993, 1997). These teachers also recognize their role as guides through the zone of proximal development. In this manner, as B. Pérez (1998) noted, the "more knowledgeable members of a group engage in social mediation to bring others into the cultural practices" (p. 4). Teachers who believe that there is no interaction among language, culture, and thought will view these as distinguishable, separate cognitive processes.

To assure quality education for all students, teachers' instructional behaviors need to mediate students' instructional needs. Effective teaching practices for minority students have been identified. Clark and Pérez (1995) identified four characteristics of teachers' instructional style: (a) language proficiency, (b) linguistic knowledge, (c) cultural knowledge, and (d) teacher competencies and attitudes. Baker (1997) summarized the works of Tikunoff (1983) and García (1988, 1991, 1997) to identify effective teacher characteristics for language minority students. In addition to having high expectations and self-efficacy, the effective teacher (a) communicates clear directions; (b) paces lessons; (c) makes jointly determined decisions; (d) provides immediate feedback; (e) monitors student progress; (f) instructs in native language; (g) employs dual language methodology; (h) integrates students' home culture and values; and (i) implements a balanced, coherent curriculum. However, Richard-Amato (1996) proposed that in recent years, critical pedagogy and multicultural education have led to a widespread reexamination of teaching practices in bilingual education. Conversely, Dalton (1998) identified five standards of effective pedagogy that are applicable across grade levels, student populations and cultures, and content areas: joint productive activity, language and literacy development, meaning-making, complex thinking, and instructional conversation. Dalton posited, "American education is learning from its considerable successes and egregious failures," but at the same time the five proposed standards "provide opportunities for every student to participate, to receive closer teacher attention and interaction, and to live in a classroom where their experiences, ways of speaking, and cultures are respected and included" (p. 33).

Apparently, as educators, we cannot divorce ourselves as social beings from our beliefs since construction occurs within varying sociocultural contexts. In all likelihood, beliefs about how learning occurs modulate teachers' approaches. Therefore, it is proposed that these epistemological beliefs become translated into observable teaching behavior or teaching style. Moreover, as posited by Good (1987), teachers' beliefs are ultimately tied to student performance. Furthermore, a teacher's beliefs and ability are reflected in the

teacher's performance expectations and in the nature of curriculum assignments, pace, interaction, and general teaching style. Bidwell (1987) contended that "what is taught and how it is to be taught entail teachers' moral judgments and commitments" (p. 208). Conceivably, a teacher's performance in relation to teaching style creates a social reality in the classroom (Bar-Tal, 1978; Good, 1987). Siberman (as cited by Bar-Tal, 1978) strongly suggested that "what educators must realize . . . is that how they teach and how they act may be more important than what they teach" (p. 150). Undeniably, the social reality created in the classroom often has life-long outcomes, especially for minority students (Rist, 1970). Ball (2000) would concede that often teachers only appropriate the cultural capital that is reflective of the majority group experiences.

### Rationale

Success for the majority of second language students has not been realized (Valencia, 1991). Ball (2000) noted "American public schools have had relatively little success in educating students who are poor, members of ethnically marginalized groups, and speakers of first languages other than mainstream or academic English" (p. 227). Perhaps this lack of realization has been, in part, due to teachers' belief systems. Generalist teachers have certain perceptions and assumptions about how children learn and, specifically, about how bilingual or language minority children learn (Burstein & Cabello, 1989; Cabello & Burstein, 1995; Olmedo, 1992). Olmedo (1992) posited that faulty assumptions often lead to lower expectations for language minority children. As revealed by Delgado-Gaitán (1989), Goldenberg and Gallimore (1991), and Lauder (1994), bilingual education teachers can also have faulty assumptions about the bilingual child's ability to learn. Some researchers would suggest that teachers' faulty assumptions are a result of deficit thinking (See Valencia, 1997).

Ostensibly, what occurs within the classroom setting often determines an individual's educational, social, and economic attainment. To understand the current social reality, we need an exploration of bilingual education teachers' epistemological beliefs about bilingual children's cognition. Researchers have often recommended that to challenge misconceptions and change the status quo, teachers must engage in reflective practices (Milk, Mercado, & Sapiens, 1992). Encouraging bilingual teachers to examine their beliefs may assist these reflective practices. When teachers engage in critical reflection, they gain insights that may assist their development as effective teachers. Moving teachers towards engaged pedagogy—a critical learning, action, and reflective process—provides them with the mechanism for self-actualization and empowerment (Freire, 1993). Often, teachers do not engage in these types of reflective practices because they have never been taught (Gallimore & Tharp, 1990; Tharp & Gallimore, 1988). Gallimore and Tharp asserted that teachers, like all learners, have their own zone of proximal professional development (ZPD). They argued that unless teachers themselves are given the opportunity

to learn what is meant to be guided in the ZPD, teachers will never be able to guide their students in their ZPD (Gallimore & Tarp, 1990; Neufield, 1992; Tharp & Gallimore, 1988).

### Significance of the Study

Although bilingual education teachers are in direct contact with minority language learners, few studies have examined these teachers' beliefs. Unfortunately, as noted Lindholm and Galvek (1997), research on teacher perceptions for culturally and linguistically diverse populations is very limited. Inherent in this lack of studies is an assumption that bilingual education teachers' beliefs are similar to non-bilingual education teachers. In contrast to this assumption, Alexander and Dochy (1995) verified cross-cultural and educational background differences among respondents' conceptions of knowledge and beliefs. Thus, we must not assume that simply because teachers and students share common linguistic and/or cultural experiences, that bilingual teachers' intuitive beliefs will assist them in recognizing the needs of language minority children. On the contrary, these teachers' implicit theories may create a classroom setting in which hegemonic discourse is evident (see Delgado-Gaitán, 1989).

The investigation of teacher epistemological beliefs is important for the following reasons: (a) bilingual teachers serve a unique role in the education of language minority students, specifically Mexican Americans; (b) the majority of the studies have been limited to teachers with generalized preparation; and (c) investigations have indirectly explored bilingual teachers' beliefs. In exploring bilingual education teachers' beliefs about how bilingual children learn and how these influence teacher practices, we can increase our understanding of teacher behavior. Moreover, understanding what propels teachers' behavior may assist in changing the social reality created within the classroom. Additionally, researching teachers' epistemological beliefs may indeed provide some additional insights into this social reality. Further, we can expand our conceptions of teacher epistemological beliefs, specifically those of bilingual teachers. This study contributes to the pedagogy of bilingual teachers by examining: (a) bilingual education teachers' beliefs of bilingual children's cognitive processes, (b) bilingual teachers' experiences and beliefs, and (c) teachers' beliefs and teaching practices.

### Research Questions

These three research questions were explored in the study:

1. What is the nature of bilingual teachers' beliefs about bilingual children's cognition?
2. What prior experiences (personal and sociocultural experiences, K-12 schooling, and background, educational theory and teacher preparation, and professional teaching) influence bilingual teachers' epistemological beliefs about bilingual children's cognition?

3. Do bilingual teachers' epistemological beliefs about bilingual children's cognition influence their teaching behavior? If so, how?

## **Research Methodology**

### **Design and Measure**

A cross-sectional survey study was conducted with bilingual education teachers. Researchers have discussed the importance of using a combination of techniques as means of understanding belief structures and teaching practices; however, studies appear to be limited in scope (see Calderhead, 1996; Pajares, 1992). Likert scales have been used to measure beliefs (Brousseau, Book & Byers, 1988; Rueda & García, 1996). Other researchers have used qualitative methods to elicit teacher beliefs and thinking (Guadarrama, 1995; Mahlios & Maxson, 1995; Rodríguez, 1993). With these considerations in mind, the researcher first observed and interviewed bilingual teachers. Subsequently, the researcher developed a belief scale using the proposed belief dimensions. The behavior scales were adapted from the Teacher Behavior Questionnaire (Marchant & Bowers, 1988, 1990, & 1997). A pilot survey was then conducted and the preliminary analysis assisted the researcher in determining that an appropriate instrument to measure the constructs had been designed.

The Survey of Bilingual Teachers Epistemology and Teaching Practices (SBTETP) consists of four parts. The Teacher Demographic Data gathers personal information regarding credentials held, degree route, years of

Table 1

#### *Descriptive Statistics and Scale Reliability*

Measure	Mean	Std. Deviation	Cronbach Alpha
Teacher Epistemological Beliefs & Prior Experiences Scale	91.13	23.87	.93*
Teacher Epistemological Beliefs Scale	22.64	4.88	.63*
Teacher Interview Scale	91.52	8.90	.70*
Survey of Bilingual Teachers Epistemology and Teaching Practices	182.65	27.98	.91*

\* $p < .001$

$N = 176$

experience, and language proficiency. The Nature of Beliefs Interview assesses the teachers' epistemological beliefs through three open-ended questions. In order to measure the influence of prior experiences on beliefs, each open-ended question is followed with three open-ended questions that gather data on personal background, educational theory and teacher preparation, and professional teaching. The Teacher Epistemological Beliefs and Prior Experience scale consists of 48 items. There are 12 closed Likert items that measure the teachers' epistemological beliefs construct. Each of these items is followed by three Likert items that also gather data on personal background, educational theory and teacher preparation, and professional teaching. The Teacher Behavior Interview scale assesses teachers' practices through 46 Likert items. Cronbach Alpha analysis for each scale was conducted and the results can be found in Table 1; the entire survey indicated a significant, high alpha reliability.

**Sampling**

One hundred seventy-six ( $n = 176$ ) bilingual teachers were surveyed from several San Antonio area school districts. This non-random sample included a minimum of 22 teachers from each grade level, that is, pre-kindergarten through 5th grade. The majority of these bilingual education teachers taught in transitional bilingual programs.

**Data Analysis**

A bi-methodological approach was used to analyze the data. The researcher utilized SPSS 8.0 for Windows (1998) to assist in the data analysis of the survey data. Descriptive statistics were employed to describe the sample characteristics, to answer the descriptive research question, and to determine the sample statistics. Peer-review was used to authenticate the epistemological dimensions derived from the open-ended items. Factor analysis was employed as a data-reduction technique to identify and validate the belief dimensions and teacher behavior factors. Cronbach Alpha was used to determine the reliability of the dimensions and factors (See Tables 2 & 3).

Table 2  
*Belief Dimensions Descriptives and Alpha Reliability*

Belief Dimension	Mean	Std. Deviation	Cronbach Alpha
Control	1.57	0.56	0.60*
Certainty	1.45	0.51	0.62*
Interaction	2.60	0.86	0.50
Structure	3.05	0.88	0.13*

\* $p < .0001$

$N = 176$



Table 3

*Teacher Behavior Dimensions Descriptives and Alpha Reliability*

Behavior Dimensions	<i>M</i>	<i>SD</i>	Cronbach Alpha	Std. Item Alpha
Classroom Ambiance	1.57	0.35	0.57*	0.63*
Cultural-Linguistic Relevant	1.49	0.39	0.57*	0.60*
Content-Control	2.04	0.32	0.04*	0.12*
Teacher Reactions and Expectations	2.43	0.53	0.52*	0.53*
Checking for Daily Understanding	2.79	0.61	0.47*	0.48*
Second Language Techniques	1.98	0.71	0.48*	0.48*
Lesson Structure	2.23	0.59	0.39*	0.39*
Native Language Techniques	1.98	0.71	0.42*	0.46*
Mastery	1.79	0.46	0.49*	0.51*
Questioning and Informing Techniques	3.17	0.62	0.47	0.47*
Checking for Long-term Retention	2.30	0.52	0.55*	0.55*
Teaching Modalities	2.34	0.48	0.31*	0.31*

\* $p < .001$  $N = 176$ 

Triangulation and ANOVA were employed to compare the means of the open-ended data and the closed items as measures of teacher epistemological beliefs. The factor analyses scale scores were used for conducting the multiple regression analyses, which included examining the relationship between: (a) prior experiences and teacher beliefs dimensions, and (b) teacher beliefs dimensions and the teaching behavior factors.

## Results and Discussion

### What is the Nature of Bilingual Teachers' Beliefs about Bilingual Children's Cognition?

This study revealed that bilingual teachers have implicit beliefs about bilingual children's cognition. Statistical support was found for four belief dimensions:

1. Control: incremental or entity belief about how the acquisition of knowledge occurs;
2. Certainty: dualistic or relative belief regarding the nature of knowledge;
3. Interaction: interacting or separate processes belief concerning language, culture, and thought in the acquisition of knowledge; and
4. Structure: simple or complex belief about the acquisition of knowledge ( $p < .01$ ).

To compare the statistical findings with the qualitative analysis, the findings were collapsed into three major themes:

1. Learning process: beliefs about how learning occurs;
2. Learning approaches: beliefs about what approaches assist learning, and
3. Learning perspective: beliefs about learning ability.

In general, these themes support the proposed dimensions and will be used to discuss the findings. Evident in the qualitative themes is that teachers' beliefs about learning are interdependent and context-dependent.

### Learning Process Core Beliefs

#### *Interactive experiences in native language*

In general, these bilingual teachers believe that knowledge is primarily constructed through interactive experiences in the native language. While the majority concedes that bilingual children learn the same as other children and that the acquisition of knowledge is incremental, some purport that being bilingual allows the child to examine concepts from differing perspectives. Carolina, a second grade teacher, sheds light on this notion:

Okay, I think bilingual children learn by processing the information that they get in their native language by that I mean they learn like any other child, but in order for them to learn they need to be taught and they need to learn and be nurtured in their native language. So I think they learn the same the way, but they also have an advantage if they are bilingual they can process information in a very different way because they looking at information in two different ways if they are truly bilingual.

### *Transfer of learning occurs when L1 is developed*

Another core belief held by the bilingual teachers is that conceptual knowledge will be transferred from the first language to the second language if the child is allowed to become fully proficient in all the four language domains in the native language. When children develop full proficiency, these bilingual teachers believe that the skills learned in the first language will also quickly transfer to the second language. Tomasita, a fifth grade bilingual teacher, reinforces the notion that knowledge taught in the native language becomes conceptual knowledge:

I think if they are a bilingual student—I think—again if you just teach them in their language in their primary language first all three things... the reading, the writing, and the speaking. . . I feel this is one of the better techniques for teaching in a bilingual content area and then they can just transfer their prior knowledge into what they are learning.

Thus, through the process of transfer, bilingual teachers believe that bilingual children can acquire abstract concepts without having to be “re-taught” acquired concepts.

### *Interaction among language, culture, and thought equals meaning-making*

These bilingual teachers also believe that connecting to the child’s culture, prior experiences, and language assists in the acquisition of knowledge. Susanna, a third grade bilingual education teacher, provides additional insight into this interactive learning process; moreover, she supplies evidence for Peal and Lambert’s (1962) notions of metalinguistic awareness and cognitive flexibility:

I teach nine-year olds and they were talking about the gravitational pull-how weight or mass are different and they were talking about how the tides are pulled by the moon and they were just birdwalking-and the bilingual kids were talking in Spanish about la luna (moon)-you know-la luna was pulling and made strange things happen (emphasis original). We talked about the full moon and then without my help they made the connection between lunacy, lunatic, loony-tunes, and they make the other kids (monolinguals) aware of the language—a lot of times I see the kids making comparison and contrasting and using that in making language their own by connecting. I recognize it easily because I do it myself.

Bilingual teachers like Susanna recognize the importance of meaning-making within the social context of the classroom. These teachers see language as a means to acquire knowledge. However, a few teachers view language, culture, and thought as separate processes. The native language is seen as simply a means to learn a second language.

## Learning Approaches Core Beliefs

### *Valued knowledge must be taught and learned*

While the majority of these bilingual teachers believe that the acquisition of knowledge is incremental and a result of an interactive process, they are dualistic in the dimensions of certainty and structure. These bilingual teachers believe that knowledge is constructed; nevertheless, they consider certain, valued knowledge must be presented and learned as factual information. They also believe that knowledge acquisition is dependent on whether the concepts are simple or complex.

### *Activation of prior knowledge assists in the acquisition of knowledge*

These bilingual teachers believe that the activation of prior knowledge assists in anchoring knowledge, meaning-making, and internalizing concepts. They believe that when bilingual children's prior knowledge is activated, certain knowledge can be simple and easily learned. However, they also recognize that some knowledge, even when anchored, is complex and, thus, difficult to learn.

### *Nature of knowledge determines teachers' role*

These bilingual teachers view their role as being dependent on how they view knowledge within the certainty and structure dimensions. When these bilingual teachers believe knowledge concepts are simple, they may not consider providing their guided assistance in the acquisition of knowledge. On the other hand, if knowledge is seen as difficult or complex, then these bilingual teachers will likely take a directive role.

## Learning Perspective Core Beliefs

### *Once the threshold level of bilingualism is reached, then learning occurs quickly and easily*

These bilingual teachers' view of the speed belief dimension is often dependent on their perception regarding the bilingual child's capacity to learn. These bilingual teachers believe that when bilingual children have achieved a threshold level of bilingualism, then learning should be quick and easy. As Andrea, a third grade bilingual teacher, reflects on the differences between bilingual and monolingual learners, she notes:

What I see when they (the children) are balanced (bilinguals), they are very quick learners, and are very adaptable, and are very imaginative with their concepts and their application of them.

*Time required to acquire knowledge is dependent on activation of prior knowledge and complexity of knowledge.*

If the child's prior knowledge is used as a means to modulate and anchor new knowledge, then the teacher is likely to perceive that the learning process will occur quickly. However, when the bilingual teacher perceives knowledge concepts as being difficult, complex, or unknown to the child, then more time will be given to acquire the knowledge.

*A child's ability to learn is modulated by native language variety and degree of bilingualism*

Although the majority of the bilingual teachers believe that all bilingual children are quite capable learners, the bilingual child's capacity to learn was sometimes linked with the child's native language variety and degree of bilingualism. Some teachers were more likely to consider Mexican American children's native Spanish language variety as inferior in comparison to that of recent arrivals. Thus, this differentiation is considered evidence of deficit thinking and linguisticism (see Skutnubb-Kongas, 1988 for a discussion on linguisticism). Interestingly, a number of bilingual teachers posit that balanced bilinguals' reasoning and creativity, especially within the interactive domain, demonstrated these bilingual learners' uniqueness and giftedness. In Irby and Lara-Alecio's (1996) study, Texas bilingual educators attribute similar characteristics to gifted bilingual students. In this current study, the teachers' incremental view is also evident in their belief about giftedness. Essentially, they believe that language minority children have the capacity to develop both languages and that once a threshold is reached, they have the ability to become gifted.

**What Prior Experiences Influence Bilingual Teachers' Epistemological Beliefs about Bilingual Children's Cognition?**

The two-tailed correlational analysis showed a significant relationship between (a) personal background experiences and teacher beliefs ( $r = .288$ ,  $p < .01$ ), (b) teacher preparation experiences and teacher beliefs ( $r = .441$ ,  $p < .01$ ), and (c) professional teaching experiences and teacher beliefs ( $r = .553$ ,  $p < .01$ ). The multiple regression indicated that the prior experience variables were significantly correlated ( $R = .558$ ,  $p < .0001$ ) and they accounted for approximately one-third of the variance in teacher beliefs. Thus, the null hypothesis was rejected because prior experiences do appear to influence teacher beliefs, specifically professional teaching experiences as confirmed by the standardized beta coefficients t-test ( $p < .001$ ). The significant statistical results for professional teaching experiences were also supported by the findings on the open-ended questions. Thus, these bilingual teacher beliefs about bilingual children's cognition are influenced by their prior experiences, specifically professional teaching experiences.

## Professional Teaching Experience Influence on Beliefs

Professional teaching experiences are powerful because these experiences provide the evidence that certain approaches are effective. As many bilingual teachers unequivocally state, “because I have seen the evidence in my kids.” Importantly, their experiences with bilingual and monolingual children from differing socioeconomic backgrounds provide them the justification that bilingual children are competent learners. This finding is contrary to studies indicating that teachers often believe that language minority children do not have the capacity to learn (See Cabello & Burstein, 1995; Delgado-Gaitán, 1989; Lauder, 1994; Olmedo, 1992; Valencia, 1997).

Furthermore, these bilingual education teachers have seen that bilingual children use the knowledge learned in one language to acquire knowledge in the second language. Teachers purport that they have witnessed that once this threshold is reached, knowledge learned in the first language is easily transferred to the second language. Interestingly, these bilingual teachers note that when bilingual learners have been in weak bilingual education programs, there is a marked difference as compared to children from strong bilingual education programs.

In addition, they have seen the evidence that when bilingual learners are given the opportunity to develop their native language to a certain threshold level, they demonstrate metalinguistic awareness and cognitive flexibility. Having experience with both monolingual and bilingual learners, some bilingual teachers indicate that metalinguistic awareness and cognitive flexibility are part of the unique learning processes of bilingual children. As Natalia, a fourth grade bilingual teacher, notes:

We discussed this earlier how my (bilingual) students are always crossing the bridge and even when talking with the English speakers. They are always connecting their language and comparing, contrasting and really making it their own by comparing and contrasting with the English languages-both languages together. It is really good method for students to learn language and vocabulary.

Unequivocally, this daily and long-term evidence experienced by bilingual teachers provides support for bilingual education as an effective means for educating language minority children. For some bilingual teachers, professional teaching experiences result in reflective practices, as Jasmine, a first grade bilingual education teacher, points out:

Sometimes you have to modify or completely change what you are doing . . . what works with some kids doesn't necessarily work with other kids, what works one year may not work at all the following year, that's how experience helps you grow and become a better teacher.

Several researchers support this position. For example, Freeman and Freeman (1994) concluded that second language teachers “examine their beliefs, own their practice, and revise their theory of learning in light of evidence taken from specific classroom experiences” (p. 39). As noted Rubin (1989), pedagogical intelligence is mostly acquired in the work place. Other researchers have also concluded that teaching experience does have an immeasurable impact on teachers’ beliefs (Brousseau, Book, & Byers, 1988). In sum, daily and long-term classroom experiences are the mediums through which the majority of bilingual teachers’ notions of teaching and learning are further affirmed and reconceptualized.

### Teacher Preparation Experience Influence on Beliefs

Two regression models were identified for the control and interaction dimensions ( $p < .001$ ). Therefore, for the control and interaction dimensions, teacher preparation experiences and professional teaching experiences were found to be influential predictor variables. The bilingual teachers’ self report also validates that teacher preparation experiences impact bilingual teachers’ beliefs, specifically the learning perspective theme. The learning perspective theme and the control dimension essentially reflected a belief that bilinguals are capable and successful learners. The findings also reflect the belief that intelligence and knowledge acquisition are incremental, rather than static. Thus, teacher preparation programs can and do influence bilingual education teachers when dynamic theories of intelligence and learning are presented.

Further, the influence of teacher preparation on the interaction belief dimension was also evident. Thereby, when teachers are made aware of the interaction among language, culture, and thought in the construction of knowledge, they are more likely to discern the importance of recognizing and addressing the child’s linguistic and cultural uniqueness. Thus, teacher preparation programs can assist preservice teachers in understanding how a child’s language and culture play a vital role in the acquisition of knowledge.

Bilingual teachers from theoretical and philosophical based bilingual teacher preparation programs, as well as master’s-level bilingual teachers were more likely to believe that their teacher preparation knowledge had influenced their beliefs. Interestingly, some bilingual teachers indicate that their classroom is a laboratory in which they are testing theory on a daily basis. Thus, bilingual education teachers find that biliteracy and cognitive and academic outcomes provide evidence of the link between theory and practice.

Interestingly, some teachers did not believe that teacher preparation experiences had influenced their beliefs about how bilingual children learn. Although teacher preparation experiences did not appear to have statistical significance in the first regression model, we can consider the practical significance. Furthermore, the qualitative findings indicate that these bilingual education teachers may have different ways of thinking, depending on their

teacher preparation background. Perhaps teacher preparation experiences are not considered significant in the daily lives of some bilingual teachers because this knowledge has become tacit or implicit knowledge (Schön, 1983, 1987). Conceivably, in the case of some bilingual teachers, their teacher preparation experiences were irrelevant because their teacher preparation program did not really address the needs of the language minority child (Chisholm, 1994; Zeichner, 1993). In the case of alternative certification bilingual teachers, possibly their lack of, or minimal teacher preparation may account for self-reported group differences.

Berliner (1987) observed that there are distinct differences in the way teachers approached and planned instructional activities based on their teacher preparation and professional teaching experiences. As a result, he cautioned that alternate routes for certifying teachers can be a dangerous practice. In this study, the aftermath of such practices is noted in some bilingual teachers' reflections. Bilingual education teachers, who had stated that their teacher preparation was inadequate, often expressed that they felt powerless to challenge the status quo within the school system. Moreover, without an adequate teacher preparation, these bilingual education teachers were not likely to see a link between theory and practice. Teacher educators need to assist teachers explore the validity of theory and the linkages to practice. This can be accomplished through engaged pedagogy in which teachers use critical reflection and action to become self-actualized and empowered (Freire, 1993). Empowered teachers are more likely to challenge monocultural and culturally irrelevant curriculum and instruction (Ladson-Billings, 1994).

### **Influence of Background, K-12 Schooling, and Personal and Sociocultural Experiences on Beliefs**

Although personal experiences were not found to be statistically significant on the follow-up *t*-test, nevertheless, the qualitative findings reveal that personal experiences do assist in the initial formation of teacher beliefs. Bilingual teachers who had experiences in subtractive language environments as young learners used these prior experiences to propel them into demanding an equal educational opportunity in the form of bilingual education for bilingual learners. In the case of some bilingual teachers, positive experiences as learners within a nurturing bilingual education classroom setting convinced them that bilingual education was an effective methodology. Apparently, early schooling experiences impact these bilingual teachers' beliefs about how bilingual children learn and how these children should be taught. For some bilingual education teachers, these shared experiences within similar contexts allowed them to intuitively understand the needs of bilingual learners. Having a "conscious" shared ethnic identity also modulated these bilingual teachers' beliefs about learning.



## Do Bilingual Teachers' Epistemological Beliefs about Bilingual Children's Cognition Influence Their Teaching Behavior? If so, How?

The simple regression findings show that teacher beliefs and teacher behavior are significantly correlated ( $r = .31, p < .001$ ). The results from the final analysis of variance provide support to reject the null hypothesis that stated that there was no relationship between teacher beliefs and teacher behavior.

Thus, bilingual teachers' beliefs about how bilingual children learn appear to influence teacher behavior. To specifically determine the relationship with the belief dimensions, the twelve teacher behavior dimensions as indicated by factor analysis were used to conduct the multiple regressions. Significant relationships ( $p < .05$ ) were found between the belief dimensions and (a) classroom ambiance, (b) cultural-linguistic relevant techniques, (c) teacher reactions and expectations (e.g., how respond to student's questions and convey student expectations), (d) checking for daily understanding, (e) second language techniques, (f) lesson structure (e.g., pacing, wait time, redirecting questions, discussion techniques), (g) native language techniques, and (h) teaching to learners' modalities. Dalton (1998) would suggest that these types of practices encourage joint productive activity, meaning-making, language and literacy development, instructional conversation, and complex thinking.

Interestingly, the analyses of the follow-up t-test ( $p < .05$ ) results revealed that there may be specific beliefs that underlie particular teacher behavior. For example, interaction as a belief dimension was linked with the teacher behavior dimensions of culturally and linguistically relevant techniques, first language techniques, second language techniques, and lesson structure. Since these bilingual teachers believed that language and culture interacted in the acquisition of knowledge, they will likely activate prior knowledge by using culturally and linguistically relevant materials, first or second language techniques, and lesson structure. In using the native language and culture of the child and employing strategies, such as wait time for questions and by focusing on process over product, these bilingual teachers are encouraging meaning-making, literacy and language development, instructional conversation, joint activity, risk taking, and time-on-task.

The control belief dimension, specifically an incremental perspective, was found to influence the factors of teacher reactions and expectations. The belief that all bilinguals have the capacity to learn encouraged bilingual teachers to react to student needs in a positive manner, thereby promoting risk taking for bilingual learners and for these bilingual teachers to have high expectations of bilingual learners.

Structure as a belief dimension was found to impact the teacher behaviors of checking for understanding, teaching to learners' modalities, and first and second language techniques. When the structure of knowledge is seen as

complex, these bilingual teachers monitor bilingual learners' understanding and use cognates to assist understanding. Again, teachers are enhancing meaning-making, complex thinking, instructional conversation, and literacy and language development. Conceivably, when the structure of knowledge is seen as a simple process, these bilingual teachers engage in whole or large group activities. In sum, certain beliefs modulate certain teacher behavior. Evident from the results is that these teachers are engaging in effective practices (Clark & Pérez, 1995; Dalton, 1998; García, 1988, 1991, 1996).

### Limitations

This exploratory study provided the researcher with some insights despite its limitations regarding generalizability. Since teacher behavior was measured with self-reported data, rather than actual observation, any conclusions drawn must take this into consideration.

## Conclusions and Implications

In using an epistemological framework, the study accomplished the goals of identifying the teachers' current reality of bilingual children's cognition and increasing our understanding of bilingual teachers' beliefs. Statistical support was found for the dimensions of control, certainty, and structure of knowledge. Qualitative analysis also justifies the use of Schommer's dimensions. Thus, bilingual teacher beliefs can be measured employing the constructs as proposed.

Support was found for the notion that bilingual education teachers possess a unique epistemological stance regarding learning. The interaction dimension indicated that most bilingual education teachers recognized the importance of language and culture in the acquisition of knowledge. The findings support the position that bilingual education teachers' beliefs do appear to be socially constructed. Experiences as bilingual learners are also unique to the bilingual education teacher. When bilingual teachers have a conscious, shared ethnic identity, they are likely to intuitively recognize the needs of their bilingual learners. This finding also speaks to the importance of having bilingual teachers, especially those with a conscious, shared ethnic identity, as role models for language minority children.

Another important finding is that beliefs are not static; rather, beliefs are dynamic and relative. While personal experiences may initially influence bilingual education teachers' beliefs, these beliefs are reaffirmed, modified, or changed with increased knowledge via teacher preparation or professional experiences. Although bilingual teacher beliefs are influenced mostly by professional experiences, this finding indicates that bilingual teachers' beliefs can be reconceptualized through later training.

Importantly, when bilingual teachers have had a strong theoretically and philosophically based preparation program, then they are likely to indicate that these experiences are influential. Specifically, in this study strong bilingual education teacher preparation programs influenced bilingual teachers' beliefs that learning is incremental and that the language, culture, and thought are interactive processes in the creation of knowledge.

This study also revealed that bilingual teachers certified through alternative routes often felt powerless to challenge the status quo and felt inept in meeting the needs of bilingual learners. Thus, alternative certification programs or university training programs lacking a clear mission for meeting the needs of all learners may leave bilingual teachers unprepared. Such a possibility may explain why these types of programs leave some Latino teachers feeling inadequately prepared to meet the needs of Latino children and limited English proficient children (Monsivais, 1990; Texas Education Agency, 1995). This finding should alarm teacher educators and policy-makers and indicate that alternative certification shortcuts may leave teachers unequipped and, thereby, leave language minority children's learning needs unmet. Consequently, there is a need for strong bilingual teacher preparation programs in which critical reflective practices are evident.

Significantly, the majority of these bilingual teachers verified through their experiences that bilingual learners, specifically Mexican American children, have the ability to learn and that learning is incremental. In addition, these bilingual teachers indicated that when bilinguals reach a certain threshold, they demonstrate gifted abilities in language and learning. These findings validate bilingualism.

Statistical support indicates that certain belief dimensions do modulate bilingual teacher behavior. This finding extends our understanding that when these bilingual teachers engage in a particular teacher behavior, they do so because of an underlying belief. This underlying belief has been justified mostly through their professional experiences and sometimes through their teacher preparation background. This finding also has important implications for changing teacher practices.

The data indicated that many of these bilingual education teachers are currently engaging in effective bilingual practices based on sound theory. However, some participants' responses also implied that they lack knowledge of the best practices. This finding should raise concern. As it has been stated before, "Teachers who do not learn to listen to their students and learn about their students as cultural beings may unconsciously be contributing to their students' seeming resistance to learning" (Alder, 2000).

The results also demonstrated that bilingual teachers, like other teachers, often do not engage in reflective practices. Some participants revealed that the interview had allowed them to examine their beliefs and to reflect on the formation of their beliefs. Others remarked that they had never realized how

experiences and beliefs had influenced their teaching practices. For this reason, the interview process was mutually beneficial for both interviewee and researcher alike.

While prior experiences can positively influence bilingual teachers' beliefs, thus promoting effective teaching practices, bilingual education teachers must examine their beliefs. This requires teachers to reflect on what factors have affected their beliefs and to reflect on what beliefs have influenced their practices. Gallimore and Tharp (1990) recommend teachers engage in critical reflection with expert consultants. They posit that changes will not occur regarding the nature of knowledge and learning within the educational system unless teachers begin to engage in critical reflective practices. Thus, critical reflective practices empower teachers to challenge the status quo.

In brief, the survey assisted bilingual teachers to reflect on their beliefs and practices and can be employed in the future towards this aim. Freeman and Freeman (1994) propose: "Teachers can develop a consistency among beliefs, practice, and theory by examining and analyzing their beliefs and making their theory active" (p. 39). Moreover, by interviewing bilingual education teachers about their beliefs, experiences, and practices, we tap into their wealth of knowledge.

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