

EXPLORING TEACHERS' EPISTEMOLOGICAL BELIEFS AND INSTRUCTIONAL PRACTICES AS PREDICTORS OF STUDENTS' ACADEMIC ACHIEVEMENT

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Abstract. This study was undertaken to ascertain the epistemological beliefs and instructional practices of English teachers and their relationship to the academic achievement of students in all secondary schools of Quality Learning Circle I (QuaLCi I), in the municipalities of Dumingag, Mahayag, and Josefina, Zamboanga del Sur, Mindanao, Philippines, during the School Year 2018-2019. It made use of the descriptive correlational research design with the questionnaire-checklist as primary data gathering tool. The findings of the study clearly revealed that English teachers possessed fair personal views about the nature of knowledge and learning. They also employed varied instructional practices throughout most lessons in the entire unit or topic. Majority of the high school students had initially mastered basic competencies in the English subject. The teachers' epistemological beliefs were positively correlated with their instructional practices. Furthermore, there was no significant relationship between the teachers' epistemological beliefs and instructional practices and their students' academic achievement.

Keywords: *epistemological beliefs, instructional practices, academic achievement, Quality Learning Circle (QuaLCi)*

Introduction

Teachers today come from many different upbringings with multiple perspectives on teaching. Teachers come to the field for various reasons and with a variety of experiences. Some become teachers because it was part of the family tradition, others because they had a passion for children, and others because it was a career that fit their needs (Balyer and Ozcan, 2014). Some teachers continue to teach the way they learned in school and have not made changes to their instruction to meet their current students' needs. Other teachers learn and try new strategies, taking risks to improve upon their methods as they develop their craft. And still, other teachers create new teaching strategies (Zmuda, 2010). Each teacher is free to be who he wants to be, but one commonality between these teachers is their determination to impact learning. Student learning is directly related to teaching; therefore, one needs to look deeper into what teachers believe-in, -know, and -do (Guerriero, 2014). Although various factors influence teachers' actions, their own unique belief systems play an important role (Fang, 2006; Kagan, 2002). Over the past couple of decades, teachers' epistemological beliefs or their beabout teaching and learning have been an important construct in educational research. Researchers to study them due to the vast number of educational issues they encompass.

Epistemological beliefs consist of a person's core beliefs about the nature of knowledge and how knowledge is acquired and peripheral beliefs about learning. These

beliefs can be naive, in which "truth is certain, absolute and able to be transferred by an authority" or more sophisticated, in which "truth is relative, changing, and actively constructed by the individual". Educational research on teacher beliefs suggests that epistemological beliefs influence reasoning, interpretation of knowledge, and monitor cognition monitoring (Brownlee et al., 2002). Tsai (2006) strongly pointed out that teachers epistemological beliefs, either implicitly or explicitly, affect students' daily routines. The same teachers hold a host of views from beliefs about students' knowledge and knowledge construction, schools' role, to the curriculum (Levitt, 2001). While these school beliefs flange a wide variety of other cognitive processes (Pintrich, 2000). Perhaps the most important point to make is that teachers' epistemological beliefs are an important factor in determining the complex relationship of how these beliefs correlate to student academic achievement (Hofer and Pintrich, 1997; Olafson and Schraw, 2002).

Even more striking is that an individual teacher's epistemological beliefs are a more predictive factor in determining the types of instructional practices that they implement in their classroom than either content or instructional strategies (Jones and Carter, 2007; Tsai, 2006). Furthermore, according to Tobin (2002) and Peterman (2003), instructional choices are the primary confirmation of the teacher's epistemological beliefs. They are also the most likely influence on their teaching and instructional practices choice (Jones and Carter, 2007; Tsai, 2006). Given the above scenario, this study was undertaken to assess the epistemological beliefs and instructional practices of English teachers and their relationship to the academic achievement of students in all secondary schools of Quality Learning Circle I (QuaLCi I) in the province of Zamboanga del Sur, Mindanao, Philippines, during the School Year 2018-2019.

Literature review

Through the years, educational researchers have used several terms and definitions about beliefs. Reviews of educational research on beliefs noted such terms as attitudes, orientations, values, dispositions, personal theories, and perspectives (Hofer and Pintrich, 1997; Kagan, 2002; Pajares, 2002). These inconsistencies extend to the definition of beliefs (Kagan, 2002; Pajares, 2002). Kagan (2002) defined teacher beliefs as "pre-or in-service teachers' implicit assumptions about students, learning, classrooms, and the subject matter to be taught". Luft and Roehrig (2007) defined them as "propositions that individuals think are true". Richardson (1996) noted that in general, anthropologists, social psychologists, and philosophers define beliefs as "psychologically held understandings, premises, or propositions about the world that are felt to be true." Due to the many ways beliefs are referred to in educational research, it is important to define the concept when used for research (Luft and Roehrig, 2007).

Although the definition of teacher beliefs is not consistent, common to most research on beliefs are attempts to clarify the terms belief and knowledge (Pajares, 2002; Southerland et al., 2001; Nespor, 1987). Smith and Siegel (2004) described beliefs and knowledge as separate but related constructs; although they are distinct, beliefs are necessary, but not sufficient. Beliefs are more subjective, whereas knowledge is more objective (Pajares, 2002; Smith and Siegel, 2004). Nespor (1987) drew from Abelson (1979) work to describe four structures she used to distinguish beliefs from knowledge. The four structures were (1) existential presumption, which is personal truths; (2) alternatively, when what is considered as ideal differs greatly from the present situation; (3) affective and evaluative loading, which include personal preferences based on

feelings and subjective evaluations; and (4) episodic structure, when the power and legitimacy of what an individual believes come from certain episodes or events in their lives.

Nespor (1987) established these four structures based on her research with math teachers and her findings regarding the teachers' strong beliefs regarding their students' characteristics and their vision of what good teaching really entailed. Although Nespor's work provided a conceptual framework for beliefs, this area of research is broad. Due to the wide span of beliefs in educational research, different types of beliefs are examined in research (Pajares, 2002). One such belief is epistemological beliefs. Epistemology originated as a philosophical principle (Southerland et al., 2001; Hofer and Pintrich, 1997). It became an area of research in psychology in the mid-1950s due to an increase of interest in epistemological development or beliefs (Hofer and Pintrich, 1997). Early studies regarding epistemological beliefs included Perry (1970) foundational research beginning in the late 1950s of mostly male, undergraduate students at Harvard and their intellectual and ethical development, and Belenky et al. (1986) research on women's ways of knowing.

Through the years, researchers continued to extend Perry's foundational research beyond Belenky et al. (1986) focus on women. These studies included using quantitative methods to determine the ways of knowing of both male and female college students (Baxter Magolda, 2002), the reflective thinking of high school students to middle aged adults (King and Kitchener, 1994) and research on undergraduates and how their epistemological beliefs affected comprehension. These studies play an important role in educational research because they, along with additional studies, provide a framework for defining epistemological beliefs. Beginning research regarded individuals' beliefs about the nature of truth and knowledge as unidimensional until 1990, when Schommer introduced a multidimensional approach to epistemology (Sulimma, 2009). By looking at personal epistemology as a system of relatively independent beliefs, Schommer's work resulted in identifying separate dimensions of epistemology (Hofer, 2002). Thus, an individual may have sophisticated beliefs in one area and more naive beliefs than having one universal belief system.

Schommer (1990) multidimensional epistemological beliefs represented a significant shift in epistemological research. Until her model's publication, all existing models were represented as developmental sequences with substantial overlap in structure and language. Schommer's framework characterized epistemological beliefs as a set of "more or less" independent dimensions. Initially, her framework consisted of five epistemological dimensions based on previous research that address the certainty, structure, and source of knowledge and the control and speed of knowledge acquisition. Schommer (1990) hypothesized dimensions, Certainty of Knowledge, describes a continuum that ranges from a naive view of knowledge as absolute to a more sophisticated view that knowledge is tentative and evolving. The foundation for this element of personal epistemology was observing developmental theorists (Baxter Magolda, 2002; King and Kitchener, 1994) that students tended to move from an absolutist to a relativistic understanding of knowledge as they progressed through higher education.

The second hypothesized dimension is the Structure of Knowledge, which reflects a continuum ranging from understanding knowledge as isolated bits to an understanding of knowledge as interrelated concepts (Schommer, 1990). Other theorists (Hofer and Pintrich, 1997) conceptualize this dimension slightly differently, describing this

continuum ranging from knowledge as a simple collection of discrete, concrete, knowable facts progressing to a view of knowledge as integrated, complex, and contextual. Subsequent research has linked more sophisticated views on this factor with higher mastery test scores administered after brief learning scenarios, indicating that students adopting a more sophisticated view approach learning more complex than memorizing facts. The third dimension acquired from Perry Jr. (1970) seminal work is labeled as Source of Knowledge. This dimension reflects a range of views regarding the role of an authority figure. The naive view believes that knowledge is external to the learner, and thus knowledge must be obtained from an authority. The more sophisticated view reflects a constructivist understanding of the learning process as an interactive event with the learner functioning as an active participant rather than a passive recipient. Interestingly, this is the only dimension that has failed to emerge in factor analytic studies of Schommer's Epistemological Questionnaire (Wood and Kardash, 2002).

The fourth hypothesized dimension, Control of Knowledge Acquisition, was derived from research in implicit-theories of intelligence (Dweck, 2000). The essence of this dimension is that people generally hold either a fixed or an incremental view of intelligence leading Schommer (1990) to name this dimension as "Innate Ability." A person with a fixed or naive view of innate ability generally takes a deterministic view of intelligence and would endorse the idea that you have only what you are born with and no more. The person with a more sophisticated or incremental view of innate ability believes that intelligence functions more like a skill that can be improved with effort. The fifth and final dimension, based on research in math related-beliefs and their influence on learning (Schoenfeld, 1989), is Speed of Knowledge Acquisition. This belief ranges from the naive view that learning happens quickly or not to the more sophisticated view that learning is a gradual process requiring continued effort and persistence. This belief has been linked to several positive learner outcomes, including better text analysis, higher scores on mastery tests, and higher GPA (Schommer, 1993).

Materials and Methods

Research design

This study employed the descriptive correlational research design as it primarily aimed to establish the relationship between the teachers' epistemological beliefs and instructional practices and the students' academic achievement. This design was also used as it mainly involved finding adequate facts and thoroughly interpreting the data gathered from the study's identified participants.

Research setting

The study was undertaken in all public secondary schools of Quality Learning Circle I (QualCi I) in Dumingag, Mahayag, Josefina, Zamboanga del Sur during the School Year 2018-2019. Quality Learning Circle I (QualCi I) is a cluster of public secondary schools under the supervision of the Department of Education (DepEd) and are situated in the municipalities of Dumingag, Mahayag, and Josefina, Zamboanga del Sur. A total of 14 public secondary schools were included in this study. Five (5) of these public secondary schools were located in Dumingag, six (6) of these schools were situated in

Mahayag, and another three (3) secondary schools were found in Josefina, in the province of Zamboanga del Sur.

Research participants

The participants included in this study were the 80 Grades 7, 8, 9, and 10 English teachers from the public secondary schools of QualCi I in the province of Zamboanga del Sur for School Year 2018-2019.

Research instrument

The researcher utilized the questionnaire-checklist as the primary instrument in the collection of the needed data. This questionnaire-checklist was composed of two parts. Part I of the questionnaire-checklist was the Epistemological Beliefs Survey (EBS), a standardized questionnaire adapted and used by the researcher in evaluating the teachers' epistemological beliefs. Created by Wood and Kardash (2002), EBS contained 38 items representing the five dimensions of epistemological beliefs, which included Speed of Knowledge Acquisition, Structure of Knowledge, Knowledge Construction and Modification, Characteristics of Successful Students, and Attainability of Objective Truth. Items 3, 7, 11, 16, 18, 24, 34, and 38 belonged to Speed of Knowledge Acquisition; items 4, 5, 12, 13, 21, 26, 28, 30, 31, 33, and 36, Structure of Knowledge; items 2, 6, 8, 10, 15, 20, 22, 23, 25, 32, and 37, Knowledge Construction and Modification; items 14, 17, 19, 29, and 35, Characteristics of Successful Students; and items 1, 9, and 27, Attainability of Objective Truth. To determine the teachers' level of epistemological beliefs, the following 5-point adjectival scale was used (*Table 1*).

Table 1. 5-point adjectival scale.

Scale	Continuum	Adjectival equivalent	Interpretation
5	4.21-5.00	Strongly Agree (SA)	More Experienced (ME)
4	3.41-4.20	Agree (A)	Experiences (E)
3	2.61-3.40	Slightly Agree (SIA)	Moderately Experienced (MdE)
2	1.81-2.60	Disagree (D)	Less Experienced (LE)
1	1.00-1.80	Strongly Disagree (SD)	Least Experienced (LtE)

Part II of the questionnaire-checklist was the Core ESL Instructional Practices (CEIP) guide, adapted and employed by the researcher in assessing the research-based instructional practices used by the teachers in teaching English as a second language (ESL). Developed by Hoover et al. (2014), CEIP contained 47 items that referred to the instructional practices grouped within seven essential thematic qualities or dimensions for providing English language learners (ELLs) culturally and linguistically responsive instruction. These dimensions included Connections (5 items), Relevance (8 items), Native Language Acquisition (4 items), English Language Development (8 items), Materials (6 items), Differentiations (11 items), and Using Assessment to Inform Instruction (5 items). A 4-point adjectival scale was utilized to ascertain the teachers' extent of application of the instructional practices (*Table 2*).

Table 2. 4-point adjectival scale.

Scale	Weight Continuum	Adjectival Equivalent Extensive (E)	Interpretation
4	3.51-4.00	Extensive (E)	Employed throughout all lessons (EAL) in

3	2.51-3.50	Frequent (F)	the entire unit/topic. Employed throughout most lessons (EML) in the entire unit/topic.
2	1.51-2.50	Partial (P)	Employed in a few lessons (EFL) of the entire unit/topic.
1	1.00-1.50	Minimal (M)	Infrequently employed (IE) in the entire unit/topic.

To determine the students' mastery level in their first and second grading examinations in English, their Mean Percentage Scores (MPS) were categorized and interpreted using the Achievement Levels based on Memorandum Order No. 160 dated September 10, 2012, of the Department of Education which is presented in *Table 3*.

Table 3. Mean Percentage Scores (MPS).

Mean percentage score	Descriptive equivalent
96-100%	Mastered
86-95%	Closely Approximating Mastery
66-85%	Moving Towards Mastery
35-65%	Average
15-34%	Low
5-14%	Very Low
0-4%	Absolutely No Mastery

Statistical treatment of data

The researcher employed both descriptive and inferential statistics to ensure the accurate analysis and interpretation of the data gathered from the study participants. The Weighted Average Mean was used to ascertain the teachers' epistemological beliefs and their frequency of application of the instructional practices. On the other hand, Pearson Product Moment Correlation Coefficient was applied to determine the significance of the correlation between the teachers' epistemological beliefs and their instructional practices. Furthermore, chi-square was employed to ascertain the relationship between the teachers' epistemological beliefs and instructional practices and their academic achievement.

Results and Discussion

Epistemological beliefs of teachers

Table 4 presents the data which reflects the epistemological beliefs of the teachers. The teachers' epistemological beliefs are evaluated in terms of the following dimensions: Speed of Knowledge Acquisition, Structure of Knowledge, Knowledge Construction and Modification, Characteristics of Successful Students, and Attainability of Objective Truth.

Table 4. Epistemological beliefs of teachers.

Epistemological beliefs	WAM	AE	I
A. Speed of knowledge acquisition.	3.08	SIA	MdE
B. Structure of knowledge.	3.51	A	E
C. Knowledge construction and modification.	3.64	A	E
D. Characteristics of successful students.	3.20	SIA	MdE

E. Attainability of objective truth.	3.54	A	E
Grand mean	3.39	SIA	MdE

As clearly reflected on the table, the results reveal that among the five dimensions of epistemological beliefs, "Knowledge Construction and Modification" has garnered the highest overall mean of 3.64; followed by "Attainability of Objective Truth," which has earned the overall mean of 3.54; and "Structure of Knowledge" with the overall mean of 3.51, having the adjectival equivalent of "Agree" and the verbal interpretation of "Experienced". Meanwhile, other dimensions of epistemological beliefs such as "Characteristics of Successful Students", which has yielded the overall mean of 3.20, and "Speed of Knowledge Acquisition", which has received the lowest overall mean of 3.08, are both having the descriptive equivalent of "Slightly Agree" which is interpreted as "Moderately Experienced".

Analysis of the foregoing findings evidently indicates that the teachers are "Moderately Experienced" as strongly supported by the grand mean of 3.39 with the descriptive equivalent of "Slightly Agree". The given findings further indicate that the teachers have a fair understanding or personal views about knowledge and learning. These teachers fairly understand that knowledge can be acquired either quickly or gradually, and knowledge can be organized either as isolated bits or highly interwoven concepts. They also fairly understand that people could have limited abilities or innate skills that can be improved. Furthermore, they fairly understand that knowledge can be absolute or constantly evolving and is actively and personally constructed and if there is an absolute knowledge that can be known or attained with certainty (Schommer, 1993).

Instructional practices of teachers

Table 5 displays the data, which reflects the teachers' frequency of application of the instructional practices. The teachers' instructional practices are assessed in terms of the following dimensions: Connections, Relevance, Native Language Acquisition, English Language Development, Materials, Differentiations, and Assessment to Inform Instruction.

Table 5. Instructional practices of Teachers.

Instructional practices	WAM	AE	I
A. Connections.	3.16	F	EML
B. Relevance.	3.09	F	EML
C. Native language acquisition.	3.18	F	EML
D. English language development.	3.08	F	EML
E. Materials.	3.13	F	EML
F. Differentiations.	3.10	F	EML
G. Using assessment to inform instruction.	3.31	F	EML
Grand mean	3.15	F	EML

Based on the table presented, the results evidently disclose that among the seven instructional practices of the teachers, "Using Assessment to Inform Instruction" has obtained the highest overall mean of 3.31; followed by "Native Language Acquisition," which has yielded the overall mean of 3.18; "Connections" having the overall mean of 3.16; "Materials" with the overall mean of 3.13; "Differentiations," 3.10; "Relevance," 3.09; and "English Language Development" which has received the lowest overall mean

of 3.08, having the adjectival equivalent of "Frequently" and the verbal interpretation of "Employed Throughout Most Lessons in the Entire Unit/Topic".

Analysis of the preceding findings clearly indicates that the teachers employ the following instructional practices throughout most lessons in the entire unit or topic as evidently supported by the grand mean of 3.15 with the descriptive equivalent of "Frequently." The given findings also suggest that, in most of their daily lessons, the teachers have provided diverse language-based tasks and activities to strengthen learners' connection of new contents and skills to what they already know as well as draw upon and support their diverse cultural norms and values, home and community teachings. They have also integrated the use of their learners' native language to reinforce the learning of the second language, have provided diverse opportunities to foster students' learning of English, and have utilized both physical and visual materials to concretize student learning. They have also used varied and meaningful approaches, methodologies, and strategies in teaching to accommodate students' diverse learning needs and have integrated the use of students' assessment data to improve daily instruction. Moreover, the current study's result strongly supports one of the key findings made by Schraw and Olafson (2008) on their previous study that teachers often prefer to differ classroom instruction by utilizing varied teaching practices. In this study, it is clearly revealed that teachers make use of different practices when teaching English to their students.

Academic achievement of students

Table 6 displays the data which reflects the academic achievement of the students in English. The results show that 55 or 68.75% of the classes garnered MPS of 66-85%, described as "Moving towards Mastery"; 24 or 30.00%, 35-65%, "Average"; 1 or 1.25%, 86-95%, "Closely Approximating Mastery" while no class received MPS described as "Mastered", "Low", "Very Low" and "Absolutely No Mastery".

Table 6. *Academic achievement of students.*

Mastery/Achievement levels		Frequency (N)	Percentage (%)
Mastered	(96-100%)	0	0.00
Closely Approximating Mastery	(86-95%)	1	1.25
Moving Towards Mastery	(66-85%)	55	68.75
Average	(35-65%)	24	30.00
Low	(15-34%)	0	0.00
Very Low	(5-14%)	0	0.00
Absolutely No Mastery	(0-4%)	0	0.00

Analysis of the foregoing findings elucidates that most of the students in these classes have initially mastered the English subject's basic competencies. Moreover, the given result confirms one of the claims of Stipek et al. (2001) that students' performance is sometimes affected not only by the operations and procedures followed by the teachers but also by the beliefs they hold about the subject and how it is taught.

Significance of the correlation between the teachers' epistemological beliefs and their instructional practices

Table 7 presents the significance of the correlation between the teachers' epistemological beliefs and their instructional practices. As clearly presented, the result reveals that the computed t -value of 3.73 is greater than the critical t -value of 1.99 with a correlation coefficient of 0.385 at the 0.05 level of significance. Therefore, there is enough evidence to reject the null hypothesis.

Table 7. Significance of the correlation between the teachers' epistemological beliefs and their instructional practices.

Variables	R_p	Level of significance	t -value	
			Computed	Critical
Epistemological beliefs Instructional practices	0.385	0.05	3.73	1.99

The foregoing result indicates a close association between the teachers' epistemological beliefs and their instructional practices. The given result also indicates that the teachers' epistemological beliefs substantially impact their choice and use of instructional practices. Furthermore, the result strongly supports one of the major findings made by Stipek et al. (2001) on the previous study they conducted that teachers who had a fairly coherent set of epistemological beliefs could have predicted their selection and utilization of the instructional practices.

Significance of the relationship between the teachers' epistemological beliefs and the students' academic achievement

Table 8 displays the analysis of the significance of the relationship between the teachers' epistemological beliefs and the students' academic achievement. As vividly presented, the results reveal that the computed chi-square value of 0.0097 is less than the critical value of 3.84 with 1 degree of freedom at a 0.05 level of significance. Hence, there is sufficient proof to accept the null hypothesis.

Table 8. Significance of the relationship between the teachers' epistemological beliefs and the students' academic achievement.

Teachers' epistemological beliefs	Students' academic achievement		MTR
	Closely approximating mastery/moving towards mastery	Average	
More sophisticated/sophisticated	32	14	46
Neither sophisticated/naive/ more naive	24	10	34
MTC	56	24	80

The foregoing result clearly indicates no close association between the teachers' epistemological beliefs and the students' academic achievement. The result also implies that the teachers' epistemological beliefs do not have significant effects on the students' academic achievement. Furthermore, the given result does not strongly support both claims of Hofer and Pintrich (1997) and Olafson and Schraw (2002) that teachers' epistemological beliefs are an important factor in determining the complex relationship of how these beliefs correlate to students' academic achievement.

Significance of the relationship between the teachers' instructional practices and the students' academic achievement

Table 9 shows the significance of the relationship between the teachers' instructional practices and the students' academic achievement. As evidently displayed, the results reveal that the computed chi-square value of 0.38 is less than the critical value of 3.84 with 1 degree of freedom at a 0.05 level of significance. Thus, there is sufficient evidence to accept the null hypothesis.

Table 9. Significance of the relationship between the teachers' instructional practices and the students' academic achievement.

Teachers' instructional practices	Students' academic achievement		MTR
	Closely approximating mastery/moving towards mastery	Average	
Extensive	8	5	13
Frequent/partial/minimal	47	20	67
MTC	55	25	80

The preceding result signifies no close association between the teachers' instructional practices employed and the students' academic achievement. The result further entails that the teachers' instructional practices do not have a substantial impact on the students' academic achievement. Although the previous quantitative results showed that the teachers employed the said instructional practices throughout most lessons in the entire unit or topic, it has been found that the extent of application of the following instructional practices is not that sufficient to improve the academic achievement of the students in English significantly. Furthermore, the given result does not strongly support one of the key findings made by Tsai (2006) on a previous study that teachers with relatively positivist scientific epistemological views allocate more time when using varied practices in teaching; thereby, improving their students' scores in the scientific tests.

Conclusion

The study's findings disclose that the teachers possess fair personal views about the nature of knowledge and learning, as evidenced by the grand mean of 3.39. They also employ varied instructional practices throughout most lessons in the entire unit or topic. The students, however, have only initially mastered basic competencies in English. The teachers' epistemological beliefs are positively correlated with their instructional practices, while their epistemological beliefs do not significantly affect their students' academic achievement. Furthermore, the teachers' instructional practices do not substantially impact their students' academic achievement.

The present study recommends that the school administrators send their teachers to training and seminar-workshops on personal epistemology to heighten their beliefs about knowledge and learning and core ESL instructional practices to keep abreast with the latest development in the teaching of English. They also have to use other instructional practices to improve their students' academic achievement and pursue graduate studies for personal and professional development. Students must exert more effort to increase their performance in the English subject. Moreover, a similar study could be undertaken to include the factors affecting the teachers' epistemological beliefs and instructional practices.

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Conflict of interest

The authors would like to certify that they have no affiliation with or involvement in any organization or entity having financial or non-financial interest in the subject matter or materials discussed in this paper.

REFERENCES

- [1] Abelson, R. (1979): Differences between belief systems and knowledge systems. – *Cognitive Science* 3(4): 355-366.
- [2] Balyer, A., Özcan, K. (2014): Choosing Teaching Profession as a Career: Students' Reasons. – *International Education Studies* 7(5): 104-115.
- [3] Baxter Magolda, M.B. (2002): *Knowing and reasoning in college: Gender-related patterns in students' intellectual development.* – Jossey-Bass Publishers 472p.
- [4] Belenky, M.F., Clinchy, B.M., Goldberger, N.R., Tarule, J.M. (1986): *Women's ways of knowing: The development of self, voice, and mind.* – Basic Books Publishers 288p.
- [5] Brownlee, J., Boulton-Lewis, G., Purdie, N. (2002): Core beliefs about knowing and peripheral beliefs about learning: Developing a holistic conceptualization of epistemological beliefs. – *Australian Journal of Educational & Developmental Psychology* 2: 1-16.
- [6] Dweck, C.S. (2000): *Self-theories: Their role in motivation, personality, and development.* – Psychology Press 212p.
- [7] Fang, Z. (2006): A review of research on teacher beliefs and practices. – *Educational Research* 38(1): 47-65.
- [8] Guerriero, S. (2014): *Teachers' pedagogical knowledge and the teaching profession.* – OECD Library 7p.
- [9] Hofer, B.K. (2002): Personal epistemology as a psychological and educational construct: An introduction. – In Hofer, B.K., Pintrich, P.R. (Eds.) *Personal epistemology: The psychology of beliefs about knowledge and knowing.* Mahwah, N.J.: L. Erlbaum 11p.
- [10] Hofer, B.K., Pintrich, P.R. (1997): The development of epistemological theories: Beliefs about knowledge and knowing and their relation to learning. – *Review of Educational Research* 67(1): 88-140.
- [11] Hoover, J.J., Hopewell, S., Sarris, J. (2014): *Core ESL instructional practices (CEIP).* – Boulder, CO: BUENO Center, University of Colorado 29p.
- [12] Jones, M.G., Carter, G. (2007): Science teacher attitudes and beliefs. – In Abell, S., Lederman, N. (Eds.) *Handbook of research on science education* Mahwah, New Jersey: Lawrence Erlbaum Associates 37p.
- [13] Kagan, D.M. (2002): Professional growth among pre-service and beginning teachers. – *Review of Educational Research* 62(2): 129-169.
- [14] King, P.M., Kitchener, K.S. (1994): *Developing reflective judgment: Understanding and promoting intellectual growth and critical thinking in adolescents and adults.* – John Wiley & Sons 323p.
- [15] Levitt, K. (2001): An analysis of elementary teachers' beliefs regarding the reaching and learning of science. – *Science Education* 86(1): 1-22.
- [16] Luft, J.A., Roehrig, G.H. (2007): Capturing science teachers' epistemological beliefs: The development of the teachers' beliefs interview. – *Electronic Journal of Science Education* 11(2): 38-63.

- [17] Nespor, J. (1987): The role of beliefs in the practice of teaching. – *Journal of Curriculum Studies* 19(4): 317-328.
- [18] Olafson, L.J., Schraw, G. (2002): Some final thoughts on the epistemological melting pot. – *Issues in Education* 8(2): 233-246.
- [19] Pajares, M.F. (2002): Teachers' beliefs and educational research: Cleaning up a messy construct. – *Review of Educational Research* 62(3): 307-332.
- [20] Perry Jr., W.G. (1970): Forms of intellectual and ethical development in the college years: A scheme. – *Jossey-Bass* 336p.
- [21] Peterman, F. (2003): Implications of psychological research on student learning and college teaching for teacher education. – In Houston, W.R. (Eds.) *Handbook of Research on Teacher Education*, New York: Macmillan 31p.
- [22] Pintrich, P. (2000): Motivational and self-regulated learning components of classroom academic performance. – *Journal of Educational Psychology* 82(1): 33-40.
- [23] Richardson, V. (1996): The role of attitudes and beliefs in learning to teach. – In Sikula, J. (Eds.) *The Handbook of Research in Teacher Education*, New York: Macmillan 17p.
- [24] Schoenfeld, A.H. (1989): Explorations of students' mathematical beliefs and behavior. – *Journal for Research in Mathematics Education* 20(4): 338-355.
- [25] Schommer, M. (1993): Epistemological development and academic performance among secondary students. – *Journal of Educational Psychology* 85(3): 406-411.
- [26] Schommer, M. (1990): Effects of beliefs about nature of knowledge on comprehension. – *Journal of Educational Psychology* 82(3): 498-504.
- [27] Schraw, G.J., Olafson, L.J. (2008): Assessing teachers' epistemological and ontological worldviews. In *Knowing, knowledge and beliefs*, Springer, Dordrecht 19p.
- [28] Smith, M.U., Siegel, H. (2004): Knowing, believing, and understanding: What goals for science education? – *Science & Education* 13(6): 553-582.
- [29] Southerland, S.A., Sinatra, G.M., Matthews, M.R. (2001): Belief, knowledge, and science education. – *Educational Psychology Review* 13(4): 325-351.
- [30] Stipek, D., Givvin, K., Salmon, J., MacGyvers, V. (2001): Teachers' beliefs and practices related to mathematics instruction. – *Teaching and Teacher Education* 17(2): 213-226.
- [31] Sulimma, M. (2009): Relations between epistemological beliefs and culture classifications. – *Multicultural Education and Technology Journal* 3(1): 74-89.
- [32] Tobin, K. (2002): Constructivist perspectives on teacher learning. – In Tobin, K. (Eds.) *The Practice of constructivism in science education*, Hillsdale, N.J: Lawrence Erlbaum Associates 11p.
- [33] Tsai, C.C. (2006): Reinterpreting and reconstructing science: Teachers' view changes toward the nature of science by courses of science education. – *Teaching & Teacher Education* 22(3): 363-375.
- [34] Wood, P.K., Kardash, C.A. (2002): Critical elements in the design and analysis of studies of epistemology. – In Hofer, B.K., Pintrich, P.R. (Eds.) *Personal epistemology: The psychology of beliefs about knowledge and knowing*, Mahwah, NJ: Lawrence Erlbaum Associates 29p.
- [35] Zmuda, A. (2010): *Breaking free from myths about teaching and learning*. – ASCD 196p.