Advances in Language and Literary Studies
ISSN: 2203-4714
Vol. 6 No. 6; December 2015
Australian International Academic Centre, Australia
Flourishing Creativity & Literacy

The Effect of Iranian Teachers' Epistemological Beliefs on Their Teaching Practice

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Doi:10.7575/aiac.alls.v.6n.6p.25
URL: http://dx.doi.org/10.7575/aiac.alls.v.6n.6p.25
Received: 02/06/2015
Accepted: 22/08/2015

Abstract

Epistemology is the branch of philosophy that investigates what knowledge is and how people know whether they know something (BonJour, 2002). It addresses questions such as: What is knowledge? How do people know if they really have knowledge? What gives a reason for any knowledge that they have? This study aimed at investigating the relationships between high school teachers' epistemological beliefs and their teaching practices. The subjects of the study were 60 teachers at Ardabil high schools. They responded to two questionnaires: an Epistemological Beliefs Questionnaire and a Teaching Practices Questionnaire. In this study, the independent variables are measures of teacher epistemology and their teaching practices as the dependent variables. Pearson product-moment correlation coefficient was used to assess the relationship between scores on the Teaching practice scale and those on the Epistemological Beliefs scale. Findings of the study showed that teachers with inexperienced epistemological beliefs tend to traditional teacher-centered practices and experienced belief holders were more tend to constructive learner-centered practices.

Keywords: inexperienced epistemology, experienced epistemology, teacher-centered practices, constructive learner-centered

1. Introduction

There is no or a little studies investigating the relation of teachers' epistemic beliefs and their pedagogical strategy. Epistemology is defined by Schraw, Olafson and Vanderveldt (2011) as a study of beliefs about the origin and acquisition of knowledge. Now the issue is: if teachers have beliefs about epistemological questions and whether these beliefs affect in any way their teaching. A contextualist theory assumes that learners construct common understandings in concerned contexts in which teachers act as facilitators. Teachers with a contextualist view are less concerned with the type of knowledge that students construct, than the process by which they construct that knowledge, and the degree to which that knowledge has authentic practices to the context it is learned in (Mertens2005). Constructivism is an epistemology, a learning or meaning-making theory, that puts forward an explanation of the nature of knowledge and how human beings learn. It maintains that individuals create or construct their own new understandings or knowledge through the interaction of what they already know and believe and the ideas, events, and activities with which they come in contact (Richardson, 1997). Chen & Elliot (2004b) mentioned that traditional ideas of teaching were positively related to teachers' naive beliefs and certainty of knowledge. Those teachers using more constructivist teaching practices felt that knowledge is acquired through effort and that knowledge was not certain. Schraw and Sinatra (2004) noted that teachers with more Experienced epistemologies are likely to be adaptable in terms of teaching strategies and they tend to engage more with their students. Teachers' teaching practices are believed to be determined by their ideas about teaching and student learning which should be driven by their epistemological beliefs (Chan &Elliot, 2004, p.817). Hofer (2001) says that teachers' beliefs influence the types of pedagogical practices and as a result affect the process in different ways. Beliefs about the role of education can filter down and impact teachers' epistemological beliefs. These include "beliefs about the nature of knowledge and the processes of knowing" (Hofer & Pintrich, 1997, p. 117).

1.1 Research Question

Is there any significant relationship between the experienced and inexperienced teachers' epistemological beliefs and their teaching practice?

1.2 Null Hypothesis

There is not any significant relationship between the experienced and inexperienced teachers' epistemological beliefs and their teaching practice.

2. Method

2.1 Participant

The study sample is 60 high school teachers in Ardabil. 30 inexperienced teachers had an experience period of 1-4 years and 30 experienced teachers had an experience period of 20-25 years. This study investigated Iranian high school teachers' epistemological beliefs and their impact on their teaching practices.

2.2 Procedures

The study was conducted during the second semester of the academic year (2014-2015). The teachers were informed that their participation would be voluntary and were assured that the information they provided would be confidential. Epistemological Beliefs Questionnaire was used on the basis of Schommer (1990) stating about belief system. According to the structure of knowledge, integration of knowledge, the source of knowledge, certainty of knowledge, the speed of knowledge acquisition and the control of knowledge acquisition. All items are to be rated on a Likert-type scale from 1 to 5. The scale includes thirty items that are rated on a five point Likert scale, ranging from 'Strongly Disagree' (1) to 'Strongly Agree' (5). Lower scores represent more inexperienced epistemological beliefs and higher scores represent more experienced epistemological beliefs. These dimensions of epistemological beliefs change alone a continuum with polarities at two extreme ends. The first dimension, Source of Knowledge, differs from students' believing in "knowledge as submitted by experts and authority" to "knowledge as gained by reason and evidence". The second dimension, Control of Knowledge, differs from "students' beliefs in linguistic ability as inborn and fixed" to "beliefs of linguistic ability as a result of effort". The third dimension, Certainty of Knowledge, differs from beliefs in "knowledge as certain and definite" to "knowledge as uncertain and ever-changing". The fourth dimension, the Speed of Knowledge Acquisition, differs from "beliefs in linguistic knowledge acquisition as quick" to "beliefs in acquisition as steady and time-consuming". The fifth dimension, the Structure of Knowledge, differs from "beliefs in linguistic knowledge as simple" to "beliefs in linguistic knowledge as complex". The sixth dimension, Integration of Knowledge, differs from "beliefs in linguistic knowledge as disintegrated" to "beliefs in linguistic knowledge as integrated and in constant interaction with the cultural context of language learning".

Teaching Practices Questionnaire intended to identify the teaching orientations of teachers in their teaching practice. The scale includes thirty items which are scored on a Likert scale of five points (1 = Never; 2 = Rarely; 3 = Sometimes; 4 = Often; 5 = Always). These items are classified under two main teaching orientations: a constructivist learner-centered orientation and a traditional teacher-centered one. In this study, the independent variables are measures of teacher epistemology and the teaching practices as the dependent variables. The researcher established a priori a minimum significance level of 0.05.

2.2 Data analysis

The mean scores obtained by inexperienced teachers in Epistemological Beliefs Questionnaire: The mean score on the "Source of Knowledge" dimension is (2.25), which showed that they tend to believe in knowledge as chiefly derived from authority figures. Their mean score on the "Certainty of Knowledge" is (2.15) indicating that they believe in unchanging nature of knowledge. Their mean score on the "Control of Knowledge" is (2.33) indicating that they believe in knowledge as limited by innate ability. Their mean score on the "Speed of Knowledge Acquisition" is (2.20) showed that they believe in linguistic knowledge acquisition as quick process. Their mean score on the "Integration of Knowledge" is (2.11) showed that linguistic knowledge is not influenced by socio-cultural norms. Their mean score on the "Structure of Knowledge" is (2.60) indicated that inexperienced teachers believe that knowledge is simple and can be deal with using by learning strategies such as rehearsal and memorization. On the other hands, the mean scores obtained by experienced teachers: The mean score on the "Source of Knowledge" is (3.33), which showed that they tend to believe in knowledge obtained by reason and evidence. Their mean score on the "Certainty of Knowledge" is (3.55) indicating that they believe in knowledge as indefinite and ever-changing. Their mean score on the "Control of Knowledge" is (3.10) indicating that they believe that linguistic ability is as a result of effort. Their mean score on the "Speed of Knowledge Acquisition is (3.20) showed that they believe in acquisition as gradual and time consuming. Their mean score on the Integration of Knowledge is (3.66) showed that linguistic knowledge is influenced by cultural norms. Their mean score on the "Structure of Knowledge" is (3.60) indicated that the experienced teachers believe that knowledge is beliefs in linguistic knowledge as complex. The mean scores obtained by inexperienced teachers in Teaching Practices Questionnaire: Most of the inexperienced teachers showed traditional orientation about language teaching (M= 4.15). However, the items applying to constructivist orientation received rather low scores (M= 2.86). Also most of experienced teachers tended to constructivist orientation (M= 3.95). For investigating if there is any significant relationship between the experienced and inexperienced teachers' epistemological beliefs and their teaching practice, the Pearson product-moment correlation coefficient was used to assess the relationship between scores on the teaching practice scale and those on the Epistemological Beliefs scale.

3. Result & Discussion

The results indicated that there is a significant positive correlation between traditional conceptions of teaching and the teachers' Innate/Fixed Ability beliefs (r = 0.66), unchanging nature of Knowledge (r = 0.52),innate ability of knowledge(r= 0.65),quick processing of knowledge(r= 0.58),simple knowledge(r= 0.67) and (r= 0.61) showed knowledge is not nfluenced by cultural norms. As well as negative correlation between traditional conceptions and six epistemological beliefs, i.e. knowledge by reason (r = -0.18), ever changing Knowledge (r = -0.15), knowledge by effort (r= -0.25), knowledge by gradual process (r= -0.21), influenced by cultural context (r= -0.33) and complex nature(r=

-0.28). Also there is a positive correlation between constructivist conceptions and six epistemological beliefs, i.e. knowledge by reason (r = 0.27), ever changing Knowledge (r = 0.25), knowledge by effort(r=0.18), knowledge by gradual process(r=0.33), influenced by cultural context (r=0.33) and complex nature(r=0.29).As well as there is a significant negative correlation between constructivist conceptions of teaching and the teachers' Innate/Fixed Ability beliefs (r = -0.36) unchanging nature of Knowledge (r = -0.22), innate ability of knowledge(r=-0.41), quick processing of knowledge(r= -0.38), not influencing by sociocultural (r= -0.44), and simple knowledge(r= 0.39).The mean scores obtained by the subjects of the study as measured by Teaching Practices Questionnaire in its two dimensions (traditional teacher-centered vs. constructive learner- centered) indicate a tendency to the first dimension by inexperienced teachers and second dimension by experienced teachers. The finding of study showed teachers who hold inexperienced epistemology believe that knowledge is simple, definite and specific. They believe that knowledge resides in authorities and it is certain and unchanging. Concepts are learned quickly, their learning abilities are innate and fixed. On the other hand, the experienced teachers believe that knowledge is complex, uncertain and it can be learned gradually through deduction processes and created by learners.

4. Discussion & Conclusion

The present study found that teacher beliefs are mostly consistent with their practice. According to Schraw & Olafson (2002), "teachers' epistemological worldviews influence the ways that they make important instructional decisions related to the curriculum, pedagogy, and assessment." Donmoyer (2001) stated that epistemological beliefs define how teachers control different classroom problems. On the hand, there have been some studies that teacher beliefs do not necessarily influence classroom practice because of several factors (Hancock & Gallard, 2004; Mellado, 1998).

Table 1. A comparison of constructivist vs. transmission (traditional) beliefs and practices (Brownlee, Schraw, Berthelsen 2012, P. 247)

	Constructivist teaching	Transmission teaching
Developmental stage ……...	Characterized by evaluativist stance ……..	Characterized by absolutist stance ……..
Epistemological beliefs …….	Sophisticated beliefs(more explicit awareness) ……	Naïve beliefs(less explicit awareness) ……
Teacher practices: pedagogy	Student-centered approach which emphasizes collaborative learning, teacher scaffolding and independent work, leading to domain-general application of critical thinking skills.	Teacher-centered approach which emphasizes acquisition of core facts and concepts mastery of basic procedures, leading to automated application of domain-specific skills.
…….	……..	……..
Teacher practices curriculum	Higher order thinking and evaluation skills based on reasoned application of first order skill (i.e., domain knowledge and procedures)	Mastery of first-order domain knowledge and procedures

Inexperienced epistemologies are parallel to transmission epistemologies and experienced epistemologies are parallel to constructivist epistemologies. Rosso (1978) determined that the educational beliefs of teachers had little influence over the instructional decisions a teacher makes. Wilcox-Herzog (2002) suggested that there was not a relationship between teachers'beliefs and their actions. The findings suggest that there is a need to take teachers' epistemological beliefs into account when considering and designing professional development opportunities. These findings help to areas of research that probe the impact of teachers' epistemological beliefs on teaching practice. Teachers' epistemological beliefs may direct curricula and instructional practices. Epistemology is not a fixed trait it can be changed. It is important to instructing teacher for rising epistemological change. Teacher training and teacher background, administrator, parent and student views and other factors may influence teacher classroom practice as well as teachers' beliefs about teaching and learning, and should be taken into account by researchers. Teacher's epistemology is able to determine what he/she sees, how he/she interprets the world, which strategies he/she selects to learn. Teacher beliefs play a major role in teachers' decision making about curriculum and instructional tasks. In summary, educational researchers have advocated the need for careful examination and direct study of the relationship between teacher beliefs and educational practice.

References

BonJour, L. (2002). *Epistemology: Classic problems and contemporary solutions*. Lanham, Maryland: Rowman & Littlefield.

Brownlee. J., Schraw. G., Berthelsen. D (2012). *Teacher practices curriculum*. Routledge

Chan, K., & Elliot, R. G. (2004b). Relational Analysis of Personal Epistemology and Conceptions about Teaching and Learning. *Teaching and Teacher Education*, *20,* 817-831.

Donmoyer, R. (2001). *Paradigm talk reconsidered*. In V. Richardson (Ed.), Handbook of research on teaching (4th ed., pp. 174-197). Washington, D.C.: American Education Research Association.

Hancock, E. S., & Gallard, A. J. (2004). Preservice science teachers' beliefs about teaching and learning: The influence of K-12 field experiences. *Journal of Science Teacher Education*, 15(4), 281-291.

Hofer, B. K. (2001) Personal epistemology research: Implications for learning and instruction. *Educational Psychology Review,* 13(4), 353-382.

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, 88–140.

Mellado, V. (1998). The classroom practice of preservice teachers and their conceptions of teaching and learning science. *Science Education,* 82(2), 197-214.

Mertens, D. M. (2005). *Research and Evaluation in Education and Psychology: Integrating Diversity With Quantitative, Qualitative, and Mixed Methods*, Sage, Thousand Oaks, Calif, USA, 2nd edition.

Richardson, V. (1997). Constructivist Teaching and Teacher Education: Theory and practice. In V. Richardson (Ed.), *Constructivist Teacher Education: building new understandings* (pp. 3-14).Washington, DC: Falmer Press.

Rosso, N. A. (1978). Capturing teachers' decision policies: An investigation of strategies for teaching reading and mathematics. Paper presented at the annual conference of the American Educational Research Association, Toronto, Canada.

Schommer, M. (1990). Effects of beliefs about the nature of knowledge on comprehension. *Journal of Educational Psychology*, 82, 498–504.

Schraw, G. & Olafson L. (2002). *Knowing, Knowledge and Beliefs*. New York, Springer Netherlands.

Schraw, G., Olafson, O., & Vanderveldt, M. (2011). Fostering Critical Awareness of Teachers' Epistemological and Ontological Beliefs. In J, Brownlee, G. Schraw & D. Berthelsen (eds.), *Personal Epistemology and Teacher Education* (pp. 149-165). UK: Routledge.

Schraw, G., & Sinatra, G. M. (2004). Epistemological Development and its Impact on Cognition in Academic Domains. *Contemporary Educational Psychology*, *29,* 95-102.

Wilcox-Herzog. A. (2002). Is there a link between teachers' beliefs and behaviors? *Early Education and Development, 13*(1), 81-106.