A qualitative study about the role of preservice teachers' beliefs in learning from literacy instruction video-cases.

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Abstract: Beliefs about the nature of knowledge have been found to influence learning (Hofer & Pintrich, 1997; Schommer, 1990). This study investigated whether epistemological beliefs interact with the observations of preservice teachers regarding teaching from video cases in a hypermedia based learning environment designed to highlight exemplary elementary literacy instruction. Two epistemological beliefs – Fixed Ability and Simple Knowledge - are the focus of this paper. A qualitative analysis of participants from the opposite ends of the fixed ability and simple knowledge beliefs continuum is presented. The results indicated that preservice teachers with a complex belief structure about the nature of knowledge and learning focus more on the complexities of teaching and learning and go beyond the mere surface features observed in the video cases.

Introduction

Cases have been suggested to be one way to approach that afford preservice teachers' discovery of knowledge regarding the complex nature of teaching (Lundeberg et. al., 1999). One solution to engage preservice teachers in examining the complex and ill-structured nature of teaching involves presenting rich, authentic video cases in a hypermedia system (Koehler, 2002). Shulman (1992) states that cases are also used to illustrate proper moral and ethical principles faced in a classroom that are worthy of emulation and to provide novices with the visionary images of teaching that are well-grounded in good practice.

One factor that has been discussed in the literature as to what individual factors affect learning from video cases is epistemological beliefs of preservice teachers. Schommer (1990) proposed four beliefs about the nature of knowledge and learning: fixed ability; quick learning; simple knowledge; and certain knowledge.

In order to understand how epistemological beliefs interact with learning from video cases, this research investigated preservice teachers' learning with Reading Classroom Explorer (RCE). RCE is a video case-based hypermedia environment designed to provide multiple opportunities for pre-service teachers to look at video footage of "exemplary teachers engaged in the process of teaching reading to this diverse array of students in several sites around the United States" (Hughes et al., 2000). Previous research with RCE has shown that preservice teachers perceive this hypermedia system to compliment and extend the traditional approaches to teacher education (Oliver et al., 2001). However, there is no evidence of how preservice teachers' epistemological beliefs impact what they observe from video cases showcased within Reading Classroom Explorer.

The primary research question addressed in this study was: Do pre-service teachers' epistemological beliefs interact/correlate with what they observe about reading and literacy instruction in elementary classrooms from using a hypermedia environment?

Method

Participants
Eleven pre-service teacher students from a teacher preparation program at a Midwestern university took part in the study. The participants were enrolled in a teacher education literacy methods course that focused on literacy instruction for elementary students. All of the participants were females. This is not surprising as previous research has pointed out that the teacher candidate population is becoming more and more homogeneous, coming from the same predominantly white middle class female population (Mayer et. al., 2000). The mean age of participants was 21.16 years. Participants were paid them for their time.

Procedure

In the initial meeting participants were administered the epistemological survey created by Schommer (1990). During one sessions of the literacy methods course, the various features of RCE were introduced. Over the course of the semester, the participants used RCE as a part of their class curriculum. They searched for clips and watched the video cases of literacy instruction available in RCE.

After about two months the participants were called for the second session for the post test. All participants met individually with the researcher in a reserved computer room. All participants were given one hour to search for clips that they thought were the best teaching practices of four given categories. These included: reading instruction for beginning readers, reading instruction for diverse students, writing instruction for emergent writers, and developing strategies for reading/writing. The participants searched for one clip in each of the above mentioned category, and then justified why they thought that the movie clip they selected was a good example of each category. They also wrote what the teacher, in the clip, could do to improve his/her literacy practice.

Data Analysis

Based on the epistemological questionnaire, Schommer (1990) categorized the 63 questions from the questionnaire into twelve subsets and used a factor analysis of these subsets to generate a set of four factors: Fixed Ability, Simple Knowledge, Quick Learning, and Certain Knowledge. The preservice teachers' individual scores for each of the factors were scored based on the scheme developed by Schommer (1990) and a qualitative analysis of their responses to video clips was conducted. Factor 1 (Fixed Ability) and Factor 2 (Simple Knowledge) respectively accounted for most of the variance and so the author decided to focus on the qualitative analysis using these two factors. Individual scores of each of the two factors were used to dichotomize prospective teachers into two groups – preservice teachers with a naïve conception of the nature of knowledge and learning, and those with a complex structure of belief systems about the nature of knowledge and learning. The author selected two participants from each end of the continuum of the two factors for a more focused qualitative analysis of their responses to the clips that they searched.

Two independent raters coded the responses of the participants. The coders analyzed the responses for the complexity and thoroughness of the responses from the participants. Complex answers were considered those which constituted participants own thoughts rather than just regurgitation of the video clip. Both independent raters, one being the researcher himself, were provided with the questions from the survey that comprised the two factors examined in this study. The questions formed the basis upon which both raters analyzed each participants response and from which a decision of naïve or complex behavior was formed. From the eight cases highlighted within the two factors, the two raters agreed on seven of the eight creating an inter-rater reliability of 87.5%. In this paper only four of the cases are showcased to illuminate the relationship between prospective teachers' epistemological beliefs and their observation of teaching from video cases.

The next section presents a detailed analysis of the responses of participants, based on their naïve and complex individual scores for fixed ability and simple knowledge.

Results

Fixed Ability

An individual with naïve fixed ability belief would believe that ability to learn is fixed to ability, whereas an individual on the complex end would believe that ability to learn improvable over time and experience. Analysis of the fixed ability factor score indicated that Mary and Kimberly belonged to the naïve end, while Susan and Emily were at the complex end of the belief system. Higher the score, more naive beliefs the individual holds. Pseudonyms are used for the participants to protect the confidentiality of the individual. Below, a detailed individual profile of Kimberly and Mary is presented.

Naïve Beliefs

<u>Kimberly</u>

Kimberly was a 21 year old Caucasian female majoring in elementary education with a fixed ability score of 9.33. Kimberly's simplistic view of ability to learn was highlighted through her responses. She rarely expanded beyond what was shown in the video clip in her answers and failed to suggest any alternative views of teaching reading instruction, rather she merely repeated what the teacher was doing. Her responses underscored that weak students have difficulty learning on their own and require one-on-one help from a teacher or a more capable peer so that the student "can use his buddy as an aid". Her responses often indicated that students who were not good at reading and/or writing were not good at meta-cognitive strategies to correct their own errors and mistakes, but need "the teacher to explain why things are the way they are" to find errors and fix them.

Complex Beliefs

<u>Susan</u>

Susan was 21 year old Caucasian female majoring in language arts with fixed ability score of 6.85, which exhibited a more complex set of beliefs that successful people are able to improve their ability to learn. She indicated that students were better able to learn on their own and improve on their own with teachers providing minimal instructional help. For example, she said that "encouraging students to write with little or no further instruction…. It allows the children to write without the fear of being judged or criticized. This is important for emergent writers to take the time exploring the written language."

Susan indicated that it is important for students to build upon the classroom knowledge and in one of the examples credited the teacher for using practical examples from student's lives that they can relate to study phonics. For example, she stated that the teacher could give an example of how to sound unknown words and then give more examples to students to do on their own and then discuss the possible words together as a group. Susan's responses showcased a more complex approach to learning and teaching reading instruction to emergent readers and writers.

Simple Knowledge:

An individual with simple or naïve set of beliefs about the nature of knowledge would think of knowledge as a set of discreet facts that need to be learned, on the other hand someone with complex belief structure would view knowledge as a being created through an active process of learning and made up of integrated set of concepts. An analysis of simple knowledge put Emily and Sarah at the simplistic end of the continuum, while Susan and Kate held more complex beliefs about the nature of knowledge. Next, a detailed profile of Sarah and Susan is presented.

Naive Beliefs

<u>Sarah</u>

Sarah was 21 year old Caucasian female, majoring in elementary education with a simple knowledge score of 11.11. Sarah's responses indicated that she was trying to avoid ambiguity by keeping the control of the classroom and having the students "read aloud" together as a whole class so that there is no confusion when the students read alone as they are become "familiar with the book" and it helps keep the students on the right track. Moreover, Sarah's responses were short and she looked for single answers in the video clips as most of her responses indicated where she did not go beyond one sentence and merely repeated what she observed in the clip.

Complex Beliefs

<u>Susan</u>

Susan was a 21 year old Caucasian female majoring in elementary education with a simple knowledge score of 8.90. She believed that knowledge does not constitute a discreet set of facts that need to be learned, cannot be just passed down by authority, neither does a problem necessarily have one solution; rather knowledge is complex, a process of active assimilation and is made up of integrated concepts. Susan's responses indicated that she believed that it is best to work out the solutions to difficult problems on your own rather that depend on authority for solution. Her belief was showcased through her response where she suggested that it was important for the teacher to let the student "figure out the name and meaning" of an unknown word while reading. She believed that knowledge was contextual and it was important for the students to learn "what word would make sense with the rest of the sentence". Unlike Sarah, Susan wasn't afraid of loosing control and being in an ambiguous situation. She had the reverse approach to classroom management, where she wanted the students to "work on their own and then come back together to discuss". As pointed out earlier, Susan's beliefs that students were able to learn better on their own, showcased that she was not afraid to give independence to students and the ambiguity in the classroom that might follow after that. Susan's belief that integration was a vital aspect of knowledge was highlighted when she pointed out how the teacher was using real world examples that were relevant to the students' lives and integrating them into her reading lesson. She further pointed out that the teacher was also having the students activate their prior knowledge and integrating it with new ideas that they are learning.

Conclusion

Bullogh and Knowles (1991) asserted that the beliefs about learning and teaching form lenses through which prospective teachers interpret teaching. These case studies indicated that preservice teachers' views about the nature of knowledge and learning impacted what they observed about teaching and learning from video cases in a hypermedia learning environment. The goal of teacher education is to influence those beliefs in the desired direction and challenge preservice teachers' notions of teaching and learning. This study adds to the theoretical literature about how preservice teachers' epistemological beliefs impact what they learn from teacher education.

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