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Personal Epistemology and Relational Pedagogy

in Early Childhood Teacher Education Programs

Joanne Brownlee and Donna Berthelsen
Centre for Innovation in Education
Queensland University of Technology

Abstract

Over the last decade, research related to personal epistemological beliefs has offered insight into how to promote effective teaching and learning across educational settings. Personal epistemological beliefs reflect an individual's views about what knowledge is, how knowledge is gained, and the degree of certainty with which knowledge can be held. However, there has been no research that specifically investigates the relationship between such epistemological beliefs and early childhood practice. This paper draws together current research findings on epistemological beliefs and tertiary learning to provide a conceptual framework which can be used in early childhood teacher education programs to provide a basis for investigating early childhood teachers' understanding about their own learning and how they use this knowledge in their practice.

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Introduction

Research has identified that structural factors, such as group size, staff-child ratios and staff qualifications, are important factors influencing the quality of care that children receive in early childhood programs (Phillips, Mekos, Scarr, McCartney, & Abbott-Shim, 2001). In particular, the level of education of early childhood teachers, obtained through pre-service or in-service teacher education programs is a significant predictor of the quality of care provided (Darling-Hammond, 2000; Burchinal *et al*., 2000; Whitebook, 2003). Barnett (2003) proposed that better-educated early childhood teachers have more knowledge and skills and are more likely to create richer learning activities that are appropriate to the learning needs of the children and that these teachers are also better equipped to solve problems when they encounter challenges in the classroom. Yet, just how the nature of the educational experience for early childhood teachers mediates their actions in their professional work has not been explored. Over the last decade or so, research related to epistemological beliefs has offered insight into how to promote effective teaching and learning across educational settings (Hofer, 1994; Schommer, 1993a). However, there has been no research, apart from pilot work carried out by the authors that investigates the relationships between personal epistemological beliefs and early childhood practice specifically. Thus, the significant focus of this paper is to develop a conceptual framework that relates personal epistemological beliefs and learning outcomes in early childhood teacher education programs.

While in the early childhood education professional community and in the wider community, distinctions are made between the work of teachers in preschools and kindergartens and the work of child care workers, this research assumes that the educative roles are equally important in the practices of both. Therefore this paper will use the term early childhood teachers to address both groups of early childhood professionals.

Understanding personal epistemologies and their relationship to pedagogical practice

The development of epistemological beliefs was first investigated by William Perry (1970) in the United States. In research with university students, Perry found that, over time, progressively more complex and integrated ways of viewing the world developed as the students progressed through their studies. The first position, or way of viewing the world, is dualism where individuals view knowledge as simple and certain and able to be transmitted by authorities. The next position is multiplism where individuals acknowledge that as well as absolute truths, there are some things that can not be known with any certainty. Therefore personal opinions are acceptable until the truth can be determined. Next, relativism, involves a belief that knowledge is actively and personally constructed and evaluated, although initially this may occur in some contexts only. More recently, the term *Contextual relativist* is preferred because it distinguishes more clearly between a view of relativism as "anything goes" to one that is based on evidence and therefore the best possible "truth" given the current evidence (Moore, 2002). In the final positions related to commitment, individuals hold beliefs in relativism, but particular beliefs are more valued than others and represent a commitment to such beliefs.

Belenky, Clinchy, Tarule and Goldberger (1986) also investigated epistemological beliefs. They interviewed 135 women from academic and non-academic backgrounds and analysed their responses to a number of open-ended questions designed to examine their thinking and development about moral, cognitive and identity issues. From this research, Belenky et al. described a sequence of positions of epistemological development which closely aligned with

the sequence described by Perry (1981). The positions on the continuum described by Blenky et al. about "ways of knowing" include *received* (similar to Perry's dualism), *subjective* (similar to Perry's multiplism), *procedural* (similar to Perry's relativism) and *constructed* (similar to Perry's relativism with commitment).

Baxter Magolda (1993a) has also described epistemological development in a similar way to that described by Perry (1970) and Belenky et al. (1986). Each year, over a seven year period, Baxter Magolda (1994) interviewed more than 100 college students who completed short answer responses to open-ended questions on a Measure of Epistemological Reflections (MER). Baxter Magolda described ways of knowing on a continuum of development that differed by gender. Relational modes of knowing that are open, flexible, connected, and responsive are more typical of women's ways of knowing. An impersonal or objective mode of knowing used by men is characterised by the use of logical, algorithmic procedures that result in separateness and abstraction. The positions on Baxter Magolda's continuum were described as *absolute* (similar to Perry's dualism), *transitional* (similar to Perry's multiplism), *independent* (similar to Perry's relativism) and *contextual* (similar to Perry's commitment positions). Further, changes in epistemological beliefs are contextually bound, situated in the specific learning experiences which are afforded to the individual so that the roles of peers and the educator in the learning processes, as well as the manner in which learning is evaluated needs to be considered. Thus, epistemological beliefs are socially constructed and the best method of epistemological inquiry is through naturalistic studies. This theory stands in contrast to earlier developmental theories that were more psychologically informed. She emphasised that: the meaning that individuals make of their experiences depends partially on their initial epistemic assumptions, partially on the nature of dissonance that they experience when they encounter others with different assumptions, and partially on the context in which the dissonance occurs.

The distinction between dualistic and relativistic thinking evident in the research of Perry (1981), Belenky et al. (1986) and Baxter Magolda (1993a) is illustrated with examples drawn from research with early childhood teachers in child care settings in Australia (Brownlee & Berthelsen, 2004).[1] Some individuals viewed knowledge as more simple (dualistic thinking), for example:
It is possible for an opinion [about child care] to be wrong. Not that I would come out and tell that person straight out. You often have people that just think we're a babysitting service. You know, that they [children] don't learn anything here, that they learn at preschool. So I find that opinion very, very bad (Kelly, p. 6)

Others believed that knowledge development was an ongoing process of inquiry (Contextual relativistic thinking) based on evidence:
I don't think any one person or anybody's opinion is really valid. It can only be valid to a point and then there's a better way. And you have to keep understanding that, because I think with all that research that's being done… so therefore in another 5 years, they [teachers] will use this information that's gathered now, and add to it, because that's how you gain knowledge isn't it? And again, it will be better (Claire, p. 6)

A growing body of research has examined the relationship between epistemological beliefs and teaching. The understanding of teachers' beliefs systems about teaching and learning can be informative about the manner in which their practice is then constructed. For example, Arredondo and Rucinski (1996) reviewed a range of research that explored how teachers' beliefs linked to their practices. Teachers with more sophisticated or relativistic beliefs were more democratic (Silver, 1975; cited in Arredondo and Rucinski, 1996); empathetic, innovative, and able to use more effective teaching strategies (Miller, 1981; cited in Arredondo & Rucinski, 1996). Hasweh (1996) also reported that science teachers who held

constructivist beliefs were more likely to explore student alternate conceptions of phenomena; had a richer repertoire of teaching strategies; and were more likely to use teaching strategies to induce conceptual change than teachers who held more dualistic beliefs. White (2000) found that pre-service teachers with naïve epistemological beliefs (dualistic thinking) tended to have a simplistic view of classroom problems. Problems arising in teaching were solved by drawing on some past personal experience. While pre-service teachers with more sophisticated epistemological beliefs were more likely to see complexity in classroom problems and seek out alternative viewpoints, including those of the child, family and school, before deciding on a course of action.

Brownlee (2001, 2003) noted that individuals with relativistic beliefs were more able to conceive of teaching as facilitating rather than transmitting knowledge. Olsen and Bruner (1996, cited in Daniels & Shumow, 2003) examined the folk psychologies of teachers about how they understood children's learning and how this knowledge influenced their teaching practices. Teachers who believed that the focus in their teaching should be on children's behaviour rather than children's thinking saw learning as reproduction and teaching as transmission. While teachers who saw children as competent thinkers, considered children's learning a process of interpretation and teaching as a constructivist endeavour. In a review of research on child development and classroom teaching, Daniels and Shumow (2003) proposed that children in constructivist child-centred environments have increased motivation, decreased stress and increased problem solving and language skills compared with children in transmissive teaching environments.

Apart from research completed by the authors (see Berthelsen, Brownlee, & Boulton-Lewis, 2002), no research has investigated the nature of early childhood teachers' epistemological beliefs and its relationship with practice. Brownlee and Berthelsen (2004) explored the nature of epistemological beliefs of childcare workers as a mediating factor in the nature and quality of practice. Six child care workers in toddler programs (children aged 18 months to 3 years) were videoed within their programs and subsequently asked to describe their epistemological beliefs and also reflect on their practices during stimulated recall interviews in which excerpts from the video were presented. The interview data for each childcare worker were analysed to identify the nature of epistemological beliefs, beliefs about children's learning, and the manner in which their reflective responses on practices observed in the video aligned with personal epistemologies and beliefs about children's learning. Two childcare workers who held relativistic beliefs and strong constructivist perspectives about children's learning described the importance of supporting children in the construction of their own understanding. For example, Rhonda who held relativistic epistemological beliefs and a constructivist view of how children learned evidenced the use of many open-ended activities, which allowed children to direct their own learning and make choices. They were encouraged to think and problem solve. The following response about water play activities recorded in the video indicates Rhonda's strong beliefs in constructivist learning.

... so washing the dolls, toileting the dolls, feeding the dolls, caring for the dolls, was something that I was offering. But I wasn't closing off all the other things that they could do. They could pour with funnels or boxes or sieves or whatever, or they could just care for their dolls. Or they could just splash each other. Whatever they wanted to do, it was good for cognitive, social-emotional, as well as the senses of touch and all the language elements around there... They just had to decide which way they wanted to go with it and, all of it was good. Whatever they did was fine. As it turns out they used the water to cool the crocodile later…It was their own extension. So that's how I like to work too. I offer props and where they go with it, that's up to them.

Other childcare workers in this study who evidenced multiplistic epistemologies were more likely to described children's learning as a process of modelling where children learnt

through observation and repeating actions. These reflections on practice were congruent with their personal epistemologies and beliefs about children's learning in viewing teaching as a guiding and modelling process.

I always tend to, if there is conflict in the room and it's over the same toy, ... show the child that there are two (of) exactly the same toys, and take one child to the other side of the room, one to the other and just get them to play quietly on their own. And then gradually they'll tend to ease closer and they'll tend to play together. They'll tend to realise "Oh yeah well that, they do have the same one as me", so they tend to play together after. If there isn't another one, well I'll try to get something a bit more interesting or I'll guide them to another activity. (Helen)

Drawing on the epistemological beliefs research related to teaching in general, it can be postulated that early childhood teachers who hold relativistic beliefs and who are reflective about their own knowledge are more likely to engage in constructivist practices and seek to develop active teaching and learning partnerships, even with very young children. This may stem from their awareness of how they and others construct meaning. On the other hand, early childhood teachers who hold dualistic beliefs about learning and knowing, that knowledge is absolute and certain, are less likely to seek out new learning or reflect on their current practices. They are more likely to view teaching and learning as a transmissive approach assuming that children learn only from direction and instruction from knowledgeable others. It is possible that the educational experiences of early childhood teachers influence their professional practice by impacting on personal epistemological beliefs and learning outcomes. The following section discusses how epistemological beliefs may be related to pedagogical practice by investigating a model of learning in early childhood teacher education.

A learning model for early childhood teacher education

John Biggs (1993) described a framework for understanding the nature of learning in tertiary education, including early childhood teacher education contexts. The 3P Model of Learning presented in Figure 1 is a description of how learning takes place by discussing *presage* (environmental and personal factors that influence learning), *process* (approaches to learning) and *product* (outcome) factors. These factors are considered to interact with each other in any learning experience.

Insert Figure 1 here

All students, including early childhood students, come to any learning situation with beliefs, abilities, knowledge (as a function of their development and learning), motivations and personality traits that are part of the component of the model called "personal presage factors". These personal characteristics then interact with the "situational presage factors" or the learning environment (e.g., assessment, classroom climate, teaching strategies) to enable the individual to develop motivation to engage in the particular learning experience. The student uses a learning strategy that should support this motive (Biggs, 1985) in order to achieve the learning outcomes desired and/or required. For example, if the student is motivated to understand and make meaning of the learning experience then they should select a learning strategy that complements that motive, such as the deep strategy of linking new information with experiences they already have. This motive-strategy congruency is what is described as an approach to learning and reflects the second "P" or the process component, which then results in a learning outcome or product.

This model was first conceived of in a linear-causal way and proposed that the presage factors preceded the processes of learning which led to learning outcomes (Biggs, 1989). However, the elements in the model are now proposed to exist in a state of dynamic equilibrium (Biggs, 1993). Each component interacts with and affects the other components in the model. Using this model, it is possible to consider epistemological beliefs as a significant learner characteristic or personal presage factor and why early childhood teacher education contexts should take account of such characteristics in the learning and subsequent teaching practices of students.

Epistemological beliefs and approaches to learning

Epistemological beliefs can be considered to be a personal presage factor that influences approaches to learning. Brownlee (2001) found in research with pre-service teacher education students that relativistic epistemological beliefs were related to transformative or deep approaches to learning and metacognitive reflection. Perry (1981) and Belenky, et al. (1986) also noted that individuals with sophisticated epistemological beliefs (e.g. relativistic) were more likely to engage in personal reflection and analysis about their understandings and use of knowledge. Berthelsen, Brownlee and Boulton-Lewis (2002) reported in their study that child care workers who held relativistic epistemological beliefs also described deep approaches to learning:

I am a person who needs to read first and often take notes. So I have to lay it down in my memory by letting it run through my hand and then put it into practice a couple of times and then it's mine. It's my information. It's part of me. If I am told something in a lecture it's gone. I can't remember. I read and then it's the taking notes that lay it down. And not just in my memory, but in my total consciousness. It sort of becomes me. And then I put it into practice. (Rhonda)

Berthelsen et al. (2002) also noted that child care workers with multiplistic epistemological beliefs did not indicate such deep approaches to learning:

I would like to read more stuff in general about my age group and ... stuff for my room, but I just find that, because I am so busy, a lot of it is just observing and sort of practical stuff (Bronwyn)

Probably hands on ... getting in and doing it with the children, discovering things with them (Carol)

Epistemological beliefs, approaches to learning and learning outcomes

It is likely that individuals with relativistic epistemological beliefs and deep approaches to learning will have learning outcomes or products (the third "P" in the model) that are meaningful and linked to prior knowledge. Brownlee (2001) noticed that pre-service teacher education students with relativistic epistemological beliefs described transformative approaches to learning and constructivist teaching practices. Therefore, epistemological beliefs influence the learning approaches taken by the student and subsequently the outcomes and understandings that influence practice. Situational factors in the teacher education context can facilitate, or not, the integration of new knowledge with existing knowledge through reflection about the sources of that existing knowledge.

Students come into teacher education programs with a breadth and depth of knowledge about children and teaching that they have developed through experience and observation. If such students view the teaching and learning of young children as common sense knowledge, then they will experiences difficulties when confronted with new theory and ideas that require conceptual change as a learning outcome (cf. Qian & Alvermann, 2000). The teacher

educator needs to help students use deep approaches to learning because such approaches are expected to lead to learning/teaching outcomes in which an informed knowledge base is based on new knowledge being connected to pre-existing beliefs about teaching young children. At the same time, this deep approach also involves questioning and critical evaluation that requires the student to seek and understand what supportive evidence is available and reflect on its meaning. This is evidenced based approach to critical thinking is the basis of relativistic thinking. While epistemological beliefs exist as an influential personal presage factor, the teacher educator can influence (as part of situational presage factors) deep learning through pedagogical and assessment strategies that lead to desired learning/teaching outcomes.

Relational pedagogy: a situational presage factor

In order to enable early childhood teachers to become aware of, reflect on, and to possibly reconstruct both their early childhood knowledge base and their epistemological beliefs, Berthelsen, Brownlee and Boulton-Lewis (2002) argued that connected teaching (see Belenky et al., 1986) is required. By referring back to the 3P Model in Fugure 1, it can be seen that such teaching is a situational presage factor which can impact on learning processes and products. Connected teaching encourages a balance of both relational (encouraging students to access their own experiences) and impersonal modes of knowing (encourage students to engage in ways of accessing the perspectives of experts) (Baxter Magolda, 1993a). Making connections between personal knowledge/beliefs (focus on the self) and scientific knowledge (focus on the theory) encourages more sophisticated ways of knowing (Baxter Magolda, 1993a; Belenky et al., 1986). Baxter Magolda (1996b) believed that the drawing together of self and theory (relational and impersonal) ways of knowing can be facilitated by relational pedagogy which focuses on connecting personal and theoretical knowledge.

Such an approach to teaching values the student's knowledge and processes of knowing (Baxter Magolda, 1992; King & Kitchener, 1994); connects learning experiences with students' experiences; and promotes a constructivist perspective of knowing and learning (Baxter Magolda, 1993b, 1996a, 1996b). These features of relational pedagogy are discussed in the following sections as mutual respect, situating learning in students' experiences, facilitating a constructivist perspective on knowing and learning.

Mutual respect

Relational pedagogy requires mutual respect (Baxter Magolda, 1993b; Belenky et al., 1986) between student peers and teachers. Cognitive and affective dimensions are inseparable in knowledge construction. The very act of learning in any learning environment is an emotional affair (Watts & Bentley, 1987). In a constructivist approach, students may be asked to reflect on and perhaps reconstruct their personally constructed ideas, which may be a threatening task. Therefore the learning environment as a situational presage factor needs to be perceived by the students as supportive and empathetic to students' needs and emotions and respectful of each individual (King & Kitchener, 1994; Watts & Bentley, 1987).

Situating learning in students' experiences

Situating learning in students' experiences is more likely to help students to value their own developing beliefs. Knowledge construction facilitated by the teacher needs to take account of students' beliefs that may have strong emotional and subjective bases. Therefore, it is expected that listening to, and exploring students' experiences not only validate them as learners but also helps them to understand that they can construct knowledge. The process of

knowledge construction is possible by enabling links that between new and prior knowledge (Baxter Magolda, 1993b).

Facilitating a constructivist perspective of knowing and learning

Reflection is a key element in a constructivist approach to learning. Students have to explicitly link new to previous knowledge and critically assess the nature of such connections. Over the last few decades, reflection on teaching has become increasingly acknowledge as significant in the teaching-learning process. It is important that teachers reflect on their beliefs (O'Donoghue & Brooker, 1996), including epistemological beliefs, to be able to develop a knowledge base that is personally constructed. According to Hatton and Smith (1995), reflection is the "deliberate thinking about action with a view to its improvement" (p. 52). Van Manen (1977) described three levels of reflection. The first is technical reflection in which there is simply an application of educational knowledge to achieve a desired end product, with no critique. The second is interpretative which is focused on analysing and understanding the educational experience and the implications for practice. Finally, critical reflection "involves a constant critique of domination, of institutions, and of repressive forms of authority" (p. 227). Hatton and Smith (1995) and Valli (1992) described similar reflective approaches. These levels of sophistication related to reflection represent a growing epistemological awareness (cf. Munby & Russell, 1989).

Levels of sophistication in thinking about knowledge in a domain are not static but change with education and the opportunities to examine and justify beliefs. Exploring epistemological beliefs about learning and knowledge provides a means for understanding how early childhood teachers construct their teaching practices and understand children's learning. It provides a means through which an expanded awareness of learning and teaching can be developed (Entwistle, Skinner, Entwistle, & Orr, 2000). Developing reflectivity requires analysis of personal theories.

Apart from the value of reflection in the construction of new knowledge, it may also play a role in promoting more sophisticated epistemological beliefs. Epistemological beliefs may be difficult to change although some reports have been made of interventions that have been successful in facilitating some changes over time (e.g., Brownlee, 2001; Howard, McGee, Schwartz & Purcell, 2000). The intervention by Brownlee (2001) required students to explicitly reflect on their epistemological beliefs which Qian and Alvermann (2000) also acknowledged may be necessary to assist conceptual change. It is also important that early childhood educators reflect on their own epistemological beliefs as these will impact on how they structure learning environments.

The use of relational pedagogy encourages students to examine personal beliefs and experiences against evidence and theory that may validate existing ideas or require the re-construction of existing beliefs in a supportive learning environment. Students are encouraged to become, what Baxter Magolda (1996a) has termed "contextual knowers". Examples of Australian early childhood teacher education programs that have incorporated the elements of relational pedagogy and connected teaching have been reported by Kaye (2002) and Gordon and Debus (2002). In a graduate early childhood teacher education program, Kaye (2002) reported that the teaching in the program emphasised respect for the students as professionals; valuing their prior experiences; facilitation of the integration of professional and personal knowledge; and providing challenges to students in order to develop critical thinking. Gordon and Debus (2002) also reported on an early childhood teacher education program that encouraged students to use deep approaches to learning. Their program included cooperative learning groups (e.g., case study approaches to facilitate deep learning); linking content to personal experiences; the use of reflective learning journals to

explore personal theories of learning; assessment which focused less on examinations which required surface learning and more on assignment work which encouraged deeper learning; as well as interdisciplinary learning units.

Conclusion

In this paper, Biggs' 3 P Model of Learning has been used to inform a framework to provide insights into the processes that guide effective learning in early childhood teacher education contexts. In Bigg's model, the critical personal presage factor, personal epistemology, has not been considered. The conceptual platform, emerging from previous exploratory research by the investigators that examined caregivers' epistemological beliefs within childcare programs catering for children under 3 years, provides a significant conceptual advancement in early childhood teacher education. It is expected that such a conceptual framework can advance theorising about the nature of education and training for early childhood teachers, which has implications for the quality of practices with young children.

The 3 P model has been used to theorise the impact of epistemological beliefs (personal presage factors) on approaches to learning (process component of model) and learning outcomes (product component of model) in early childhood teacher education programs. The nature of epistemological beliefs of early childhood teachers impact on the quality of their learning which influences pedagogical practices. It has been proposed that early childhood teacher education programs need to focus explicitly on personal epistemological beliefs within supportive learning environments. Sophisticated beliefs about "knowing" will be facilitated <u>directly</u> through explicit attention on currently held beliefs and <u>indirectly</u> through attention to the quality of the teaching-learning environment. Within early childhood education teacher education programs, more exploration needs to be made to understanding students' beliefs about children's learning and how the beliefs of the teacher influence the manner in which they will practice. Attention then needs to be given to how these personal theories connect to formal and current theoretical knowledge in order that students construct new understandings that will inform their manner in which they practice.

Recently Schommer-Aikens (2004) has proposed a broader view of personal epistemology suggesting the epistemological beliefs sit within larger cognitive and affective systems. This assumes that epistemological beliefs do not function in isolation. She suggests that there are 6 interactive sub systems which include (1) cultural views about relationships with others (hierarchical or egalitarian which has implications for beliefs about authority and experts), (2) beliefs about knowledge, (3) beliefs about knowing, (4) beliefs about learning, (5) classroom performance, and (6) learning processes involved in self-regulated learning (comprehension, metacognition, critical thinking, problem solving). Sub-systems 1 -4 are similar to what Biggs (1993) would describe as personal presage factors. Subsystem 6 reflects the second "P" of Biggs' model, the Process component while subsystem 5 is similar to the third "P", the Product component. Schommer has not fully developed the model but she proposes it as a beginning for other researchers to further investigate. Biggs' model may prove to be a starting point for attempting to take up Schommer's challenge in future personal epistemology research.

[1] In Australia, early childhood teachers in child care centres are responsible for the direction of programs in long day care centres but are not usually eligible for registration as teachers (i.e., eligibility to teach in formal school programs). They usually (but not always) hold a two or three year diploma in child care compared to a base standard for teacher registration of a four year bachelor degree. They are therefore unlikely to be called teachers and are known most commonly as group leaders. It should be noted that some group leaders do hold four-year qualifications.

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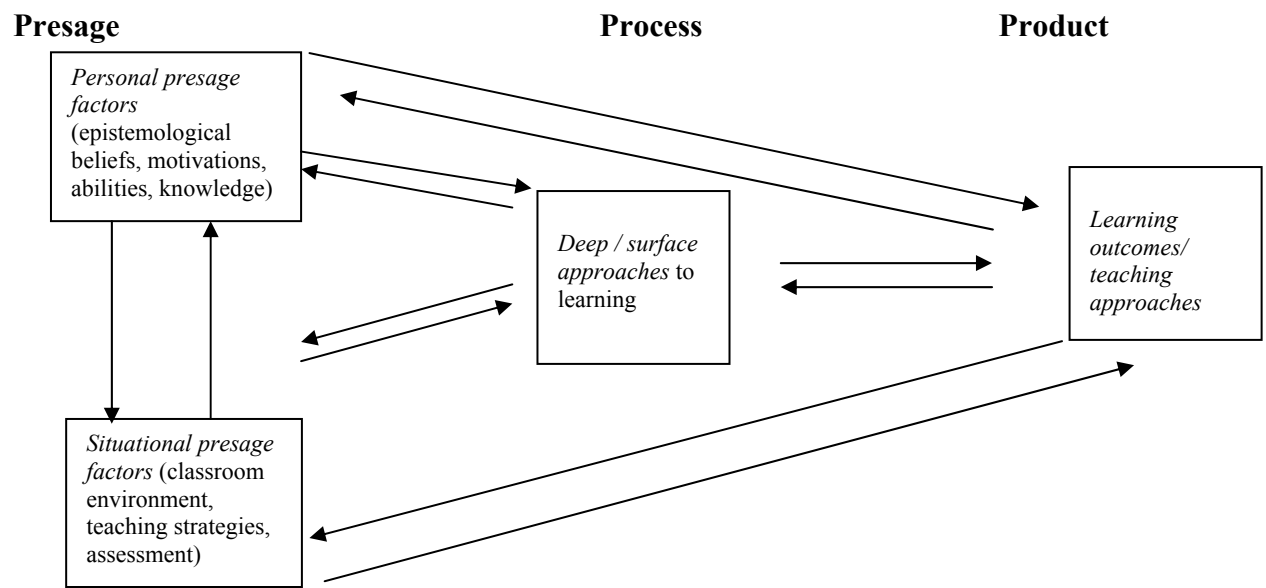
Presage   **Process**   **Product**

Personal presage
factors
(epistemological
beliefs, motivations,
abilities, knowledge)

Deep / surface
approaches to
learning

Learning
outcomes/
teaching
approaches

Situational presage
factors (classroom
environment,
teaching strategies,
assessment)

Figure 1. Biggs' (1993) 3P Model of Learning