

Epistemological Beliefs and Teaching Conceptions: A New Look from the Transitory Perspective

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Abstract.

The neglects of conceptions of teaching in which their holders did not show their fully quantitative focus on themselves and their teaching their fully qualitative centeredness on students and their learning entails the limitation of the conceptions about teaching and learning being associated with the two learning models: traditional/ transmissive and progressive/ constructivist modes of learning. Therefore, literatures documents Chan et al's (2004) efforts into basing their self-developed instrument on teacher-centered categories and student-centered conception to conduct a study of the relations between epistemological beliefs and conceptions about teaching and learning held by Hong Kong teacher education. As these categories neither situated at the two classification were all firmly-established results of respondents' interpretation of their teaching experience and idiosyncratic understanding of teaching phenomenon as the impossibly-distorted truth, these exist other lenses of academics from which the meaning teaching phenomenon believed and perceived. This article proceeds the justification that the conceptions which were neither located at the teacher-centered nor student-centered conception bearing unique characteristics in the dimension of teaching as opposed to their counterparts in the studies centered on teacher conception of teaching. It can bring significantly potential benefit for the advancement in the pedagogical scientific study of teaching as a series of gaps in previously-conducted studies can be filled with the engagement of these unclassified categories of teaching and learning conception.

Keywords: Epistemological beliefs; Teaching conceptions; Teacher-centered orientations; Student-centered orientation

1. Introduction

No matter if the third conception centered on teacher-students interaction located on the multiple-level categorization model of conceptions of teaching, as the result of Kembers' review of 13 studies centered on academics' teaching conception, is widely acknowledged or not, its subcategories or categories neither arranged into the teacher-centered nor student-centered orientation still subsist as truly-existing entities of academics' teaching conception. This truth is impossibly distorted as these unclassified categories were all firmly-established results of respondents' interpretation of their teaching experience and idiosyncratic understanding of teaching phenomenon. Therefore, these unclassified conceptions of teaching should not be entailed for suffering the jointly negative impact of staying in the circumstance

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of being neglected. Such a conscious inference is of paramount and meaningful as it helps maintain their possibly potential meaning in the development of pedagogical studies, especially in those focused on teaching conceptions. The employment of these findings in another context can help make understanding about academic's view of teaching become more sufficient. Indeed, there is a growing consensus amongst the scholar in the field of education that educational innovation is doomed to failure if it does not give any weight to teachers' conception (Betoret and Kamp; Artiga, 2004; Chan and Elliot, 2004). Narrowing the contextual scope of this down the success of innovativeness of instructional practice might help easily admitted the role of teacher conceptions. Implementation of educational innovation corresponds with the time when the teachers are objectively expected to make a massive and extensive and intensive transformation in their instructional behaviors. Rather than opinionatedly imposing strict execution of reform-didactically approaches on the shoulders of teachers or effortlessly encourages them to change in empty words, detection of deeply-ingrained beliefs as the cause leading to them of their adherence to their own outmoded forms of instruction or the insistency in adapting the new is of firstly recognized as necessary. As what they believe act as filters through which all relevant learning and information used to prepare teachers to act in the classroom is influenced (Brown et al., 2009; Pozo, 2014; Wong et al., 2006; Zanting et al., 2001), and as the relationship between teachers' beliefs about teaching and learning and classroom practice (Feixas Camp; Euler, 2013, Chapman, Ramondt, & Smiley, 2005) in empirical studies have documented, and above all, as conception are belief-driven (Clark & Peterson, 1986; Marland, 1995, 1998; Richardson, 1996), to have the arbitrary or belief function as such the detrimental factors for such ignorance were not detected sufficiently and precisely. Widening the scope of learning about teachers' thinking about how to teach to learn and to know to increase the detection of central impedimental beliefs, which then benefits the mechanism targeting at refining their conception of teaching. This does not mean that having the full conceptions of teachers should be the standard but, the insufficient understanding of how academics view about issues related to teaching, learning and knowing turns them into the major obstacles (Borg (2005; Lam & Lamp; Kember, 2006; Handal and Herrington, 2003).

2. Conceptions of Teaching and Epistemological beliefs

2.1 Conceptions neither located at teacher-centered nor student-centered classification

Students' conceptual acquisition in the direction of the knowledge of the discipline and how those concepts are related are seen as central of the fifth.

...give...concepts... relate the interaction between...and...and how these two relate to each other. (Dall'Alba, 1991, p. 295).

...to help or to train the students...think or analyze the problems criticallyrelate what they learn in a college into the community (Gow & Kember, 1990, p. 63).

...make sense in some way of their life experiences (Samuelowicz & Bain, 1992, p. 100).

Paralleling the expectation that students gain the disciplinary knowledge through their active engagement, the teacher become:

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a resource person. . . generally, to guide the students, I don't see it as spoon-feeding (Gow & Kember, 1990, p. 63).

Some of respondents start functioning as students' cognitive supporter by "pitching explanations at an appropriate students' current level of learning ability":

... tie new material with material that is already in their brain...to build a framework of knowledge in their minds...relate something new to...already know. (Trigwell et al., 1994, p. 80)

Correspondent with the time when the teacher stops occupying the cnera role, the students are then expected to take more responsibility and task in their leaning.

... as long as it promotes the student having a clear understanding of what they are learning (Samuelowicz & Bain, 1992, p. 100).

The student... work by themselves, do prac reports, this sort of thing, without making use of something that somebody else has done... (Prosser, et al., 1994, p. 222).

To promote students' active participation, those respondents engages in an interaction with them:

"... [students] can discuss their mistakes with their demonstrator or lecturer...." (Prosser, et al., 1994, p. 222).

... if the text...not accessible...to find an alternative method of presenting the text...(Samuelowicz & Bain, 1992, p. 100).

and encourages students to question, which might make them depart from his/her preplanned structure.

... don't want students to take everything...at face value...think for themselves... interpret before I tell them...won't tell...the result... ask them to predict...."(Trigwell et al.,1994, p. 80)

The following quotation also indicates a developmental process.

... they talk and I listen....to guide them, not to force something down their throats (Kember & Cow, 1994, p. 63).

Because the respondents appreciate the selection of lesson content is conducted with the concern about what students have been previously experienced and accumulated.

...relate the need to know to the wants to know.... relating what I think they need to know with what they already know . . . (Prosser, et al., 1994, p. 224).

Raw textbook's information is also firstly recognized as necessary gateway for students' process of pursuing such relational knowledge as they are required to act upon that data. The

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notions of ‘contextualizing’ information, leading one ‘to seek’ further information, knowing how to ‘make sense’ of information, and how to ‘relate’ that information – these are good examples of ‘acting upon’ information means. As Cohen (1988a) points out, "Teachers who take this path must work harder, concentrate more, and embrace larger pedagogical responsibilities than if they only assigned text chapters and seatwork" (p. 255). Learning is seen to involve a process of developing meaning by acquiring the concepts of the discipline and knowledge of how those concepts are related. As students can only make sense of the content knowledge unless they do not make personal use of what they already know to build on these lesson content, and using the importance of using their understanding to make sense of their life experience, they need to be assisted in overcoming cognitive obstacles (as in "negotiating the winding road"). This is consistent with Brown et al.'s (1989b) view of the teacher as a kind of expert guide who helps students as novices traverse new cognitive territory while enculturating them into a particular disciplinary community. The nature of that support gradually evolves from providing a clear and well-structured basis and/a sort of safe knowledge foundation that can be built on/to a more distant monitoring of the learning process. The processes of working intently and intentionally with lesson information, the analysis and synthesis of information; the grappling with contradictions and the weighing of arguments undertaken by students is as not good and broad as the teachers, transformative processes nonetheless in similar way as the teachers might have made use of what they experienced as guidance. it encourages students to work independently while concurrently providing ample support by continuing to generating the environment to get them fall into or find the way to connecting new and old that leads to increased understanding. an environment that provides challenges with proper safeguards. As knowledge is students assume not take full responsibility for the construction of their knowledge as the teacher offers targeted support to render their teaching activities and students’ information to-knowledge process occur as effective as possible. that emphasizes the constructive nature of learning and stresses that both students and teachers aim at realizing the same goals. The distribution of responsibilities of the learning process is decided interactively. There exists the continuous interchange in students and teachers’ responsibilities and tasks that who takes the lead and what kind of tasks are executed by whom decided interactively by monitoring the learning process itself.

Although students are expected to use their own intellectual framework to construct the knowledge, the process of transformation seem to be limited within the teacher’s guidance. The reason behinds this might be it is still important as the answers; and it requires that individuals agree on the ground rules for classroom discourse as after all, the objective of teaching is still students’ understanding of the material in reaching consensus on disciplinary matters. that is, there was usually the generally acceptable answer to a complex problem. Negotiation is for "reaching consensus on important matters," for the development of a disciplinary "learning community" in the classroom. There is a recognition that “correct” understanding of concepts can be acquired by attempting to link new information with prior knowledge and knowledge “is a function of how the individual creates meaning from his or her own experiences” (Jonassen, 1991b, p.10), the adoption of interactive instruction result in major to entail the openness of the floor for individual bidding and active mental participation from which students insightful thinking about the content can be triggered. Bähr & Wibowo (2012) suggest that interactive discourse must be based on their emerging understandings of the subject matter. Not only it helps the provision of a window into their minds on the side of teacher but also the students can look deeper down what they have in mind. In general

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education subjects, a teacher's interactions for their knowledge construction and lesson understanding are also considered to involve much more than questioning (Gillies & Khan, 2011). It must include the provision of feedback with the focus on expanding students' understanding of what are learning (formative evaluation) and producing the revisions in students' hypothesis about their lesson interpretation derived from their confronting to mistakes/errors. Using various discursive moves in the form of prolepsis to facilitate negotiation between the self and the objective of lesson is also strongly encouraged (Rommetveit, 1974, 1979).

The structural conduit of interaction in the classroom still starts from teacher's provision of stimulus, followed by generation of perturbing or tensive agents to induce a certain amount of disequilibrium or discomfort on students' current state of knowing. That can be seen as the explanation for the cases in which students offer delayed response to teacher's questions. Students' intrapersonal interaction is then characterized by interchanging between the new lesson content and what they have been accumulated that later yield personal meaning which can be seen as the sign of knowledge being constructed. Supporting to this, using specific ways challenging but supportive to encourage discussion, and, most importantly, acknowledging and making space for the presence of students' interpersonal relationship'' (p. 249). Students experience the changes or adjustment in their currently internal level of knowing which then influence their learning behavior seen as the outcome of interaction. Due to continuously monitors at the appropriate level of help and coaches the gradual growth of self-regulation skills in elaborating the previously-gained variables and textbook's information when learners' self-regulation capacities have been insufficiently called upon until students can regulate their own learning, the nature of interaction is supportive. The continuous mutual adaptation of teachers' and students' responsibilities and tasks the distribution of responsibilities of the learning process is decided interactively. While the learner may codevelop their understanding of lesson from effort into elaboration new and old, it remains the task of the teacher to design the supportive environment that enables this co-development. that emphasizes the constructive nature of learning and stresses that both students and teachers aim at realizing the same goals.

What makes the fifth the sharply different from the first two is its respondent's concern about making students become capable of generating the relational knowledge themselves by making full use of what they have in mind to interpret and coding the input. However, what it is that students are receiving and constructing of such a knowledge or the scope of knowing can be seen an indicator/navigator for discovering aspects of their similarities. With the focus of teaching goal on students' concept acquisition and increased understanding of elements content themselves, it can be assumed that the scope of knowledge constructed by the students is still in the direction of the knowledge of the discipline. Because of that, it can be said with certainty that teaching is still the act of transfer knowledge to students but now in the fifth knowledge transferring is implemented in a more effective manner. In other words, instead of passively receive what the teachers deliver as their counterparts in the first two, they are encouraged adding on to, an extension of, or an elaboration of their prior knowledge and newly-transferred textbooks to accrue these transferred concepts. Hence, a picture of teaching of the fifth and the first two start with teachers' setting up lesson objectives they hope students to achieve then. Although the method of instructions fifth as students' prior knowledge and experience, it shares similarity in the procedure of teaching planning followed by the lesson objectives selection is selection of content, the methods of instruction, and forms of evaluation. Subject matter is

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conceived as a static body of knowledge which is fixed, finished and ready-made. No matter what students' prior knowledge are considered in the process, the target is at supporting students in building knowledge in lien with at the fixed agendas. To achieve this, it requires the teacher a sophisticated understanding of students and of the content they are being asked to learn. It requires the teacher to selects and organizes lesson content and to keep things moving in such predesigned scope. Monitor the use made by students within the framework of information resources that are put at their disposal. In this learning environment, students assume not to gain full responsibility for the construction of their knowledge as the teacher offers targeted support to render their activities as effective as possible. to ensure that lessons unfold as planned. There might exist a revision of the nature of teachers' support. For example, the teachers, in preparing a finely-honed lecture, might have eliminated possibility students' random, unfocused searches for information that are sure to overwhelm them to the point that the really creative processes of discovery, reflection. This can be done by teacher processes of information retrieval, analysis, sorting, and evaluation to find the ways in which the very kinds of things students need to be doing for themselves. To ensure students till construct knowledge and ensure the fixed agenda, the nature of that support gradually evolves from providing a clear and well-structured basis and/a sort of safe knowledge foundation that can be built on/to a more distant monitoring of the learning process.

The teacher's primary role is that of manager or orchestrator. adjustments or regulations (in the form of teacher action) come from outside the system. Doll (1986) uses the example of hot water circulating in a house to illustrate what he means by a closed system. Any change in the way this process functions is seen as problematic, resulting in either chaos-water leaves the system and the furnace melts the pipes-or some external adjustment that helps correct the system (e.g., adding water to the pipes). The teacher is the external regulator, staying outside the arena of action. As Doll (1989) points out, the notion of the teacher being above the fray fits well with the traditional view of science. While such a view is a thing of the past, according to Doll (1989), its specter still haunts the field of curriculum: "Far too often our curriculum is reductionist, and far too often this curriculum assumes the teacher to be a spectator in the arena of learning" (p. 248). To this point, the scope of knowing is still limited as it is stressed on generally-accepted public knowledge as emergence of knowledge is from disciplinary ground as packaging product and at best to reach the extend of correctness in the sense that it meets certain disciplinary standards (Resnick, 1987a). as what students are expected to work with is within the framework so that it can be matched or aligned with predetermined outcome criteria, the not related to students learning need or curiosity-driven knowledge. Although it is constructed on the foundation of the student's individual knowledge, or although the responsibility for actually using prior knowledge in engaging processes of information-knowledge transformation lies squarely with the students, it is not really the so-called personalized knowledge. How far the knowledge seems to be determined by the teachers as the teacher can withdraw their support or intervention when they sense the students acquire the subject matter.

The dominant relationship between belief dimension in the first two conceptions was that of respondents-to-content, that is, what was to be imparted or transmitted is the main issue in their concern. They are seen as the sages whose role is directive, roots in authority in determining how classroom and students' learning happen so that what their predetermined agenda can be achieved. The learners are then, in that sense, as 'an empty vessel' into which respondents'

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knowledge and textbooks' information are continuously poured till it is filled (Fox, 1983 , p.153). The type of knowledge students stored in their mind is respondents' knowledge and descriptive knowledge from the book. In other word, what they stored is not only passively-absorbed but also externally-constructed as the respondents' instructional behaviors are not referred to themselves. learning was understood to be neither problematic nor particularly dynamic elements in the instructional process. It is assumed that, the nature of relation between teaching and student learning is sending-receiving as described in the notion of banking education in which the teacher can send their knowledge or everything from material to the bank metaphorically viewed as students' mind and gradually withdraw them when she or he needs during assessments or tests.

As students' information-to-knowledge transformational process is taken into accounted manifesting through the respondents' concern on enabling students to connect their previously-gained knowledge and experience, the type of knowledge constructed by students is often referred to as 'procedural' or 'operative' knowledge. Learning, in the fifth, is seen to be personally, actively-engaged and self-evaluated in the guided instruction. Students are then treated as the dynamic elements or the processor of information or the teacher's participant in his or her teaching process. Corresponding with the students' shift from 'recipient to participant' is a well-worn cliché that the role of the teacher has changed in a significant and positive way: no longer a 'sage on the stage', the teacher now functions as more of a 'guide on the side'. The nature of relation between teaching and learning might be cooperative as teachers and students are regarded to be jointly responsible in the process of knowledge transformation.

Students (intellect) and the teacher is the dominant relationship between belief dimension in the last two, signifying the importance of teaching functions which promote students' particular forms of inquiry for newly-triggered thought. The students as more than just an active processor of information and the teacher is more than the guide on the side but functions as the facilitator and the activator. Whereas it is the students' role to actively engage in the process of developing their knowledge or changing their worldview, it is the teachers' role to actively engage in supporting that learning. In the classroom settings, teachers and students have fundamentally different roles. As changes in the tasks and students' responsibilities do not affect the nature of teachers' tasks and responsibilities but only alter the nature of their interventions, or what teachers do in order to support learners to achieve particular learning outcomes, changes, the nature of relation between teaching and learning might be collaborative.

2.2 Epistemological beliefs

It is Hofer's (2000) proposal that epistemic beliefs function as two widely-known domains: (1) the nature of knowledge, which includes beliefs regarding certainty and simplicity of knowledge. according to Hofer, the former deals with "the degree to which one sees knowledge as fixed or more fluid" while the latter concerns if knowledge is viewed as the collection of separate factual information or as an amalgam of interrelated concepts; and (2) the nature of knowing, which is inclusive of the source of knowledge and justification for knowing. In this dimensionality, the former is dealing with the conceptions as if knowledge is described in "external authority" and justification for knowing works with the issues if the individual's evaluation of knowledge claims and experts (Hofer, 2000, p. 380-381). Epistemology, in its

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broadest sense, refers to theory of knowledge (Pritchard, 2006). Despite of rooting in in philosophy, epistemology as an academic field remains a topic of debates and discourse in the domain of philosophy. Thus, scholar in the field of education shows their interest and concern about its nature, origins, and acquisition of knowledge. because of that, both learners and teachers' personal epistemologies and epistemological beliefs are a thriving topic in pedagogical studies (DeBacker et al., 2008; Hofer, 2000). With the intention of placing the research centered on epistemology in the field of education under a strict system, Schraw, (2013) proposed to tell the difference between studies on personal epistemologies or epistemological worldviews and research on epistemological beliefs. It is Schraw's claim that personal epistemologies or epistemological worldviews includes a wide scope of matter and examines a collective set of personal beliefs dealing with the certainty of knowledge and simplicity of knowledge along with knowledge origin and justification. In contrast, it is the latter whose scope is narrower: a set of beliefs that determine personal perception about aspects of knowledge, including its nature and how it is acquired is under examination. Although this classification does not get supported by all of researchers in the same field. Specially, it is Hofer's suggestion (2010) that "personal epistemology" is inclusive of a wide-range of "beliefs that individuals hold about knowledge and knowing" (p. 85). Such an argument get advocated by philosophical views that postulates that "a prerequisite for possessing knowledge is that one has a belief in the relevant proposition"; furthermore, this belief "must be true" (Pritchard, 2006, p.5).

According to (Eisner, 1992; Pajares, 1992) the value or belief in educational orientations seems to have potential influential role in academic's' evolutions about what type of knowledge shows its relevance to a specific teaching and learning situation. Further, such beliefs and values function as the factors driving these academics to the decision of choosing and storing variable in term of information which they view as to be most appropriate and applicable (Ennis, Cothran, & Loftus, 1997). For that reason, what can be decided is that it a specifically certain relation between acais' epistemological beliefs and their teaching and learning conceptions could be the potential. It could become of great value in meaning such relations and of great usefulness in supporting researchers' claims is the acknowledgment that teachers' theoretical frameworks are beliefs driven (Clark & Peterson, 1986; Marland, 1995, 1998; Richardson, 1996).

Literature on what the teacher believe in teaching is of growing as including beliefs about education, beliefs about teaching and learning, and beliefs about teacher efficiency (teacher efficacy) (Fang, 1996) due to their conception of teaching and learnings always under construction. Numerous theoretical and empirical studies documented the strong internal relationship between what they believe and how they imply their instructional practice and the learning environment (Brown & Rose, 1995; Kagan, 1992; Nespor, 1987). Scholar in the field of education these days manifest their interest in learning academics' beliefs and what teachers perceive about the nature of knowledge and the nature of learning (known as epistemological beliefs) (Flores, 2001; Howard, McGee, Schwartz, & Purcell, 2000; Schommer, 1990) and how these personal epistemologies have an influence on the instructional design and practice (Hofer & Pintrich, 1997; Prawat, 1992). Schommer (1994) was a prime advocate of such research. She proposed that personal epistemology is a belief system consisting of five more or less independent dimensions: the structure, certainty, and source of knowledge and the control and speed of knowledge acquisition (Schommer, 1990, 1994). It is Schommer's hypotheses that

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epistemological beliefs are situated along a continuum, from naive to sophisticated beliefs. If an academic believes that knowledge is not complex, obvious and specific, that knowledge comes from authorities of many forms such as teachers and textbooks and that is fixed and unchanging, he or she is tends to adopt the naive epistemologies. On the other hands, to the one who generally believes that knowledge is not simple, uncertain and tentative, that knowledge can be learned gradually through cognitively mental process and happened inside, that knowledge can be constructed by the learner (Howard et al., 2000; Schommer, 1994), he or she is associating with the sophisticated epistemological belief proposed by Schommer (1990). To validate these assumptions, Chan et.al, (2004) conducted an exploratory study of the relationships between epistemological beliefs and conceptions about teaching and learning. However, their studies base on conceptions from the two learning models: traditional/transmissive and progressive/constructivist modes of learning. The constructivist learning model is often contrasted to the transmissive/ traditional learning model. The constructivist learning model/conception emphasizes the creation of active learning environments that permit critical thinking, discovery, and collaboration. In contrary, the traditional/ transmissive learning model views the teacher as the source of knowledge and students as passive recipients of knowledge. Such model/conception emphasizes learning by receiving information, especially from the teacher and from textbooks, to help students encounter and learn well-defined concepts (Howard et al., 2000; Prawat, 1992).

3. Conclusion

The focus in this article has been on the provision of specific evidence basing on the quoted interview of conceptions which neither located in the teacher-centered nor the student-centered in studies centered on academics' view of teaching and learning phenomenon. Besides sharpening contrasting features in the nature of relationship between teaching and learning provided above, what should be taken into consideration is similarities lying at the type of knowledge constructed by the students and the source or what constitutes into the intramental process of such knowledge construction of each conception. Hence, the fifth and the last two have qualitative similarities in three following. 1. Attentiveness to student intellectual cognition. what individuals already know and how they think about something will significantly influence learning. Revolutionary science is akin to Piaget's notion of accommodation, in which an individual's cognitive structure is modified to fit new information. Their intention was to provide a learning environment that would help people develop, toward greater autonomy as learners. 2. It is the ability to access powerful ideas/ discern important things/core principles developed within the discipline but it is important that teachers honor the student's own effort to gain meaning-even when it reflects less mature understanding. This frequently means settling for partial or incomplete understanding on the part of student. 3. Teachers who have a conceptual-change view of disciplinary knowledge are more inclined to think of the learner in constructivist or interactive terms teachers must strike a balance between their obligation to the discipline and their obligation to the learner. That is, teachers feel an obligation to the discipline. As literatures documents the relation between teaching conceptions and epistemological belief, and as the unclassified conceptions becomes different from their counterparts in the studies centered on academics' view about teaching, concern should be paid for reconsidering if these remain much to be discovered with the engagement of those.

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