Reflection and Continuing Professional Development: Implications for Online Distance Learning

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Abstract: This paper examines the role ‘reflection’ plays in continuing professional development (CPD), and draws implications for online professional development. While doing so, online CPD is related to individual cognitive structure, community of professional practice, online collaboration, and the cultural contexts of practitioners.

Continuing Professional Development

Professional development in any profession has traditionally been considered as a one-time affair in one’s career (i.e. pre-service education); though changing professional needs necessitate in-service/on-the-job professional development the activities of which include either a full-time certificate or diploma or accumulation of credit hours of professional development training or even professional socialisation and dialogue in seminars, roundtables and conferences. In many cases these include a series of unrelated events to meet certain professional requirements of the time, and may not have a life-time professional development/learning schema. Professional development, on the other hand, needs to be seen as related to professional practice and culture of continuous learning within a learning organization. The conceptual clarification on professional development given by Guskey (1999) sounds appropriate: “those processes and activities designed to enhance the professional knowledge, skills, and attitudes of educators so that they might, in turn, improve the learning of students ... it also involves learning how to redesign educational structures and cultures” (p.16). He also argues that the deficiency approach (i.e. professional development activities to contribute to make up one’s deficiencies of knowledge and skills) is itself deficient, and should cover a wider canvas of continuing professional development (CPD) so as to keep pace with the emerging knowledge base of the profession and its conceptual and craft skills.

Guskey (1999) further notes that continuing professional development, as a process, should be:

i) intentional: i.e. professional development activities are based on purposes which are linked to broader vision of the profession;
ii) **ongoing**: i.e. professional development involves ongoing processes and activities based on horizontal and vertical integration within a dynamic professional field; and

iii) **systemic**: i.e. professional development activities, need to be integrated and related to the system where professional practice takes place.

The conceptual clarity on CPD described above has been underlined in the online CPD framework suggested later in this paper, and that it has been related to individual reflection, online collaboration, collaboration in community of practice, and professional culture. In the section below, we examine the contributions of scholars to the role of reflection in learning and continuing professional development in professions, followed by discussion on reflection and personal/professional development in the next section; and take up drawing their implications in relation to online learning, community of practice and individual transformation in professional identity in the subsequent section.

**Reflective Practice and Professional Development**

In what follows is a brief discussion on the role of ‘reflection’ in professional development and professional practice, since it is contended that reflection facilitates professional development. Though not a recognised construct in psychology, it is quite often used in education (especially in professional development), and is used to describe thinking that is meta-cognitive, i.e. thinking about the process of thinking. Moon (1999) views reflection as a mental process that has some purpose or outcome. We describe below the works of important scholars like John Dewey, Jurgen Habermas, Donald Schon, and Jennifer Moon; and the role of reflection in learning and professional development.

**John Dewey**

The work of Dewey (1933) is considered as the beginning of the study and application of reflection. For him, reflection is a kind of thinking, in the process of which one brings the subject to the forefront of the mind and gives a serious thought to this. It is a process of manipulation of knowledge and its reprocessing towards the set goal, and so, it is goal-directed. One ‘thinks’ when in uncertainty or difficulty so as to solve the ‘perplexity’, and the process leads to testing through some action.

Dewey believed that effective education through reflection should aim at ‘making sense of the world’, and therefore, this is related to experience. A distinction between primary experience and secondary experience is made by Dewey — the former is a direct interaction with the material and social environment, and the latter is a reflective experience in which the environment is used as the object of reflection. Miettinen (2000) presents Dewey’s model of reflective thought as follows (Figure 1):
Dewey’s concept of reflective thought and action, depicted in Figure 1, comprises five phases, viz.: i) disturbance and uncertainty, ii) intellectualization, iii) formation of hypothesis, iv) reasoning, and v) hypothesis testing.

Reflective learning, therefore, takes place in problem identification, hypothesis formulation and its testing in action. Reflection and reconstruction of the environment are intimately related — therefore, thought constitutes and expresses the individual-environment combination — and so, Dewey’s conceptions provide the foundation to constructivism in teaching and learning.

Jürgen Habermas

Habermas (1971) studied the nature of knowledge that human beings adopt or generate (i.e. knowledge constitutive interests of human beings), and the use of reflection as one of the processes that human beings adopt in the generation of particular forms of knowledge. The knowledge constitutive interests are of three types: technical / instrumental knowledge constitutive interest, knowledge constitutive interests in hermeneutic disciplines, and emancipatory knowledge constitutive interests. In social sciences, both interpretive processes of enquiry (which is the basic method) and critical/evaluative processes of enquiry (which provide critique so necessary for self-understanding and critique of the process) are adopted for knowledge generation and interpretation.

The evaluative enquiry is equated to reflection, and the critical theory of social sciences uses questioning and understanding to serve the emancipatory interests. While reflection may not play any role in physical sciences, it is important in case of interpretive enquiry of social sciences and for emancipatory interests; and reflection should be used both at stages of interpretive enquiry, and empowerment and
emancipation. (Barnett, 1997). While applying to the context of teaching, Van Manen (1991) suggests for the application of reflection at four levels: i) day-to-day application in thinking and acting, ii) reflecting on specific events or incidents, iii) reflection on personal experience and experience of others, and developing understanding through interpretation (i.e. interpretive enquiry of Habermas), and iv) reflecting on reflection, i.e. understanding the nature of knowledge and possible emancipation (i.e. emancipatory interests of Habermas).

**Donald Schon**

The most widely used theory and application on reflection for professional development is that of Schon, (1983; 1987). In an earlier work, Argyris and Schon (1974) distinguished between ‘expoused theories’ (those that involve the philosophy of the profession and guide professional action) and ‘theories-in-use’ (that the professionals learn about the profession in day-to-day life, and which represent the professional behaviour). They argue that the expoused theories taught to novices to graduate as professionals are rarely applied in professional practices which base on context-specific practical ways of performing the profession, and, therefore, are privately developed by individual professional practitioners. The epistemology of professional knowledge and practice is guided more by theories-in-use rather than the undeveloped expoused theories; and, practical problem solving in action is more important than the professional rule book.

Schon distinguishes between ‘reflection-in-action’ and ‘reflection-on-action’—the former occurs at the time of action with unexpected consequences, and guides the process of professional action through ‘knowledge-in-use’ (derived from theories-in-use, and has very less to do with expoused theories), while the latter occurs when the action has already taken place, and is retrospective. ‘Knowing-in-action’ occurs when the action goes as per expectation. The novices in the professions can be educated under certain conditions to become reflective practitioners — when the professional knowing-in-action is contextualised into ‘the particular socially and institutionally structured context of that profession’ (Moon, 1999: 45); and this is largely shared by the community of practitioners. Therefore, the students of the professions should be put to situations of uncertainty so that they practice reflection-in-action (i.e. processing of information during action) and develop through coaching the artistry of the profession in the practicum and with the risk-free environment.

**Jeniffer Moon**

Based on a review and critical appreciation of the previous works on reflection, Moon (1999) provided a model/map of learning (along with the representation of learning) and the role of reflection in it, which has provided a base to further work on reflection in online professional development.

Moon (1999) critically analysed Schon’s (1983) work to put up her framework/map of learning and the role of reflection in it. Based on the critical appreciation of Schon’s work, she had further drawn on works of others to provide both a theoretical stance and a practical stance for reflective practice in the professions, and therefore for professional development. She points out that further works on that of Schon
have theorized Schon’s model and treated reflection-on-action in a much broader fashion than what Schon originally proposed. Subsequently, considerable interest was shown in the use of reflection-in-action in still-evolving disciplines of nursing, education, and social work which represent Habermasian hermeneutic knowledge constitutive interests, and for which processes of review, interpretation and reconstruction of ideas are used (rather than facts, as in case of scientific disciplines).

Moon (1999) notes that in the discipline of education, teacher education (rather than teaching or teachers per se) has taken more interest in reflective practice. In other words, reflection has been used more for professional development rather than facilitating student learning. Presenting the theoretical stance on reflection, Moon concluded: “The outcomes of reflection in reflective practice include learning and action, empowerment and emancipation. Reflective practice may also imply the general orientation of being reflective” (1999: 65). Further, “The implication is that users of the term need to negotiate and agree the meaning of the term for themselves” (1999: 66).

Moon further notes, on the basis of an earlier work (Moon, 1996) on training for promotion of health, that improvement in both professional practice as well as health promotion should be the goal of reflective practice. On the other hand, professional educators often stress on developing reflection in students rather than in themselves. Within professional practice, it has been utilized for initial training like that of Schon (1987).

Reflection works through both personal and professional development; the pattern of relationship between the two has been a matter of debate. Moon writes, “While reflection as a term is not much used to describe processes of self-development, that reflection facilitates development and growth of a person is assumed … Reflection could be seen as a tool that facilitates personal learning towards the outcome of personal development — which ultimately leads towards empowerment and emancipation” (1999: 88). The work of Moon (1999) on map of learning and the role of reflection is further discussed below to provide a base to our discussion on its implications for distance learning in a later section.

**Reflection, and Personal and Professional Development**

While some researchers note that professional development and personal development are different matters, Harvey and Knight (1996) and others note that the former is a matter of the latter. Many think that personal or self-development plays some role in professional development. For instance, Winter (1995) contends that professional development depends on the development of self-awareness of a person. Eraut (1994) posits that growth of individual professional behaviour is the result of use of self-knowledge (being conscious of one’s knowledge and skills, one’s limitations, other sources of knowledge, etc.) through self-management (i.e. ‘use of time, prioritization and delegation’). Personal development involves self-awareness, self-improvement, and empowerment and emancipation. In a way, it is the acquisition of new knowledge to further enrich the process of reflection.
Harvey and Knight (1996) plead that mere self-awareness does not involve reflection, rather for reflection to lead to professional development should be extensive to include examination of what we do and why we do it. They contend that the aim of professional development is transformative learning. Moon (1999) writes, “Transformative learning relates also to the meta-critical state necessary for emancipation and, in this second manner, also suggests the progression of self-development through the three elements of self-development” (p. 82) (the three elements include: self-awareness, self-improvement, and empowerment and emancipation). Vis-à-vis the three elements, Eraut (1994) brings in the constructivist view of learning to explain meaning construction and interpretation of experience; and suggests that one needs a special problem (i.e. more difficult problem) to review one’s existing understanding. Mezirow (1990) points out that individuals always try to preserve the sanctity of their meaning or cognitive or meaning structures, and avoid experiences which do not fit into these. Therefore, special efforts are needed to bring in reflection to examine the existing cognitive/meaning structures.

Self-improvement/growth further leads to empowerment and emancipation. Habermas (1971) refers this to the third form of knowledge constitutive interests; Friere (1970) calls this the process of conscientization; and Mezirow (1990) in his transformative learning talks of perspective transformation in which there is critical self-awareness or critical reflection of their presuppositions (on which learning is based) so as to allow for more integrative and inclusive perspective. Moon (1999) writes, “Reflection could be seen as a tool that facilitates personal learning towards the outcome of personal development—which ultimately leads towards empowerment and emancipation” (p. 88).

Not much work has been done on linking learning to reflection, though reflection has a significant place in Kolb’s experiential learning, Dewey’s reflective thinking, and Schon’s reflection-in-action and reflection-on-action. Moon (1999) attempts to link reflection to learning and professional development through relating it to a map of learning involving cognitive structure, stages of learning, approaches to learning, and representation of learning. Reflection, as was noted earlier, “is a mental process with purpose and/or outcome that is applied to relatively complicated or unstructured ideas for which there is not an obvious solution” (Moon, 1999: 152). Reflection works more effectively at higher stages of learning like meaning making, working with meaning, and transformative learning. Moon (1999) further notes that reflection is involved in three areas: i) in new learning due to restructuring of the cognitive structure especially at the stages of ‘meaning making’ where it is equal to ‘reflection-on-action’ and ‘transformative learning’ (where it involves critical overview); ii) at higher stages of representation of learning due to further manipulation of meaning and for upgrading of learning; iii) and also in case of upgrading of learning. In the cognitive structure, reflection when is combined with imagination becomes emancipatory—a combination of past experience and imagination for future — the idea of Habermas (1971) for emancipation of social groups. Mezirow (1990) also notes that reflection is crucial at the final stages of transformative learning.

Reflection is used at different stages of learning in various models of experiential learning, reflection-on-action, transformative learning, professional development, and others. Those who have applied reflection have considered and emphasized on
The purpose of reflection is representation of past experiences and learning, reorganisation of present meaning, and improvement of present and future understanding and performance. Reflection has also been crucial in theory building as in case of Schon’s reflective practice and Mezirow’s transformative learning; as also for self-development and emancipation through critical view (overview) of the self and the society.

**Nature of Learning**

The nature of learning (and learning for professional development) is based on the map of learning presented by Moon (1999) which is “based on the literature on reflection and student learning, supplemented by observation and personal reflection” (p.104). Learning in contexts of both classroom teaching and reflection in professional development needs to be viewed broadly and systematically. The map of learning presented in Figure 2 is based on: i) cognitive structure and assimilation of Piaget, 1971; the work on cognitive structure by Ausubel and Robinson, 1969; and constructivist view of learning; ii) critical reflection and transformative learning (Mezirow, 1990, 1991); and iii) approaches to learning developed by the Gothenburg School in the seventies and the University of Lancaster in the eighties (Marton et al, 1984; Marton & Saljo, 1997; Ramsden, 1992), and later by Richardson (2000).

The map given in Figure 2 is grounded in the constructivist view of learning in that the focus shifts from the structured teaching of the teacher (where: content and organization of the curriculum is the basis of learning; knowledge is transmitted from the teacher to the learner; learners’ entry behaviour or prior ability and knowledge guide teacher’s teaching strategy; the learner accumulates new ideas and knowledge from outside and replaces with old ones) to learners’ construction of their own knowledge organized in a network called cognitive structure. The learner determines
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what is to be learnt, and the teacher facilitates that learning. The learner employs his/her cognitive structure to learn from the new materials, and therefore meaningfulness of materials and learning depends on the extent of matching between the material and the learner’s prior learning/cognitive structure. The role of the teacher, therefore, is to carefully design materials for greater liking of the learners, facilitate interaction for greater assimilation of materials, and provide appropriate forms of assessment.

Brown et al (1989) point out that understanding is indexed by experience, and that cognitive experiences should be situated in authentic activities. These activities of the teacher greatly influence students approach to learning, which in turn affects the use of cognitive structure and its movement across the ladder of various stages of learning (from ‘noticing’ to ‘transformative learning’). In case of learner-centered constructivist learning, there is possibility of application of reflection in the process of learning. Suchman (1987) argues that there is nothing like an ultimate shared reality, but rather reality is the outcome of the constructive process of each individual, and therefore, it is construed that, in both individual and group processes of learning, reflection plays an important role in facilitating the individual ‘construction’ of meaning and group ‘negotiation’ of meaning.

The cognitive structure given in Figure 2 (guidance, assimilation, and accommodation) is spiral in nature, which goes on at every stage of learning (for its original version, see Moon, 1999: 110). Ausubel and Robinson (1969) point out that the cognitive structure—a network of theories, concepts, propositions, facts, data, etc. available to a learner—must relate to the new material of learning and modify/accomodate itself. This is possible if the material is meaningful to the learner — if it is meaningful the learner learns, if not then he/she simply memorizes the material. The cognitive structure stores the newly learnt material, accommodates and readjusts itself in response to new ideas, and actively guides the individual in the learning of new material. Therefore, in the constructivist view of learning, cognitive structure is central to individual construction of knowledge/meaning, and group negotiation of meaning. Mezirow (1990) uses meaning perspective to explain the role of cognitive structure, and points out that individuals who get trapped in their meaning perspective (and do not open up to new ideas and meanings) should be facilitated to be emancipated — and that’s what transformative learning does, and this is where social construction/negotiation of meaning assumes significance.

Moon (1999) had presented five stages of learning — ranging from noticing to transformative learning in a hierarchical manner— based on the works of Habermas (1971), Mezirow (1990), and literature on student learning, approaches to learning, and theory of cognitive structure. These are briefly described as follows.

- At the first stage of learning, i.e. noticing, the cognitive structure facilitates the individual to notice what is to be learnt; and attitude, motivation and emotion play important roles in this task.
- Once noticed, one proceeds to the stage of making sense, i.e. keep aside the previous knowledge, find out coherence in the present material, try to organise it, and put together the ideas derived from the material.
• This leads to the third stage of learning, i.e. making meaning in which the new material is assimilated into the cognitive structure; one relates it to what is already known; and the cognitive structure accommodates the new meaning derived (i.e. meaningful learning), and relates to its established discipline.

• At the next stage of working with meaning, the learnt materials and the meaning derived become part of the cognitive structure; one reaches a stage where one does not need the learning materials at hand to be able to further think and reflect; this is what is called `manipulation of meaningful knowledge of a specified end’ (Moon, 1999: 144); it involves a private process of construction of meaning.

• This leads to the final stage of transformative learning that is more sophisticated than the fourth stage, and where there is extensive use of the cognitive structure. The learner becomes capable of evaluating one’s own frame of reference, and others’ knowledge and process of knowing.

The other aspect of the map is the approach to learning. Starting from the Gothenberg School in Sweden, the further works of Marton et al (1984), Marton and Saljo (1997), Entwistle (1988, 1997), Ramsden (1992), Biggs (1993), and Richardson (2000) have influenced the work on deep and surface (and strategic) approaches to learning, which affect individual learning. In the deep approach, the intention is to understand the ideas by oneself, relate ideas to previous ones, look for patterns and check evidence, critical examination of logic and argument, and get engaged actively. The surface approach propels one to try to cope with course requirements, by treating course contents as unrelated pieces of knowledge to be memorized (without making any sense) so as to meet the pressure of work.

The approach to learning adopted by the learner determines the best possible representation of learning (BPR) (Figure 2: from ‘memorization’ to ‘restructured reflection’) vis-à-vis the stages of learning. For instance, even if one has reached the second stage of ‘making sense’ (in the stages of learning), but due to a surface approach adopted, one will be simply reproducing unrelated ideas in the BPR since one cannot relate new learning to the existing one. Deep approach to learning will have greater use of cognitive structure to new materials of learning. Also, the maturity of individuals plays an important role in the approach adopted.

The process of learning is contextualized in the sense that the new material of learning interacts with the cognitive structure and relates to the existing knowledge/ideas about that learning in the cognitive structure. Learning and thinking are not separate from the subject matter of learning, and as Marton and Ramsden (1988) write, “their character should be defined by the imperatives of that subject matter”. Laurillard (1993) writes that the teacher’s design and interpretation of the material shall greatly affect the nature of learning material and therefore student learning. Also, it is important to note that, besides the teacher or any other media, the learner’s cognitive structure will have a bearing too. Therefore, both material design and learner cognitive structure play important roles in student learning.

As already noted in an earlier section, cognition is a useful construct in psychology while reflection is not. Therefore, there has been very little research on reflection as
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such, except in areas of professional development. Reflection is applied to complicated or uncertain situations or tasks, though it has been associated with thinking. Swartz (1989) notes that it is concerned with thinking about the process of thinking, i.e. meta-cognitive thinking; and Brookfield (1995) uses it for critical thinking. While reflection could be some form of thinking or cognition, it is certainly narrower than these. However, reflection assumes importance in ordering and reordering of the cognitive structure vis-à-vis the new incoming information, and therefore, in making meaning/transformative learning and professional development.

**Reflection in Learning and Professional Development**

As has been discussed earlier, reflection is a mental process applied to complicated or unstructured ideas. In the map of learning, reflection may occur to facilitate the cognitive structure to reaccommodate and readjust, and the best possible representation of learning (verbal and non-verbal in self- or structured assessment) can help to further reflect and upgrade the stage of learning.

It may be noted that reflection works in situations of unstructure and complacency, and that it works with meaning — i.e. manipulation of meaning. Therefore, within various stages of learning, reflection is involved at stages of making meaning, working with meaning, and transformative learning. Another possibility is that reflection facilitates the cognitive structure to upgrade one stage of learning like making meaning (which has already taken place) to a higher stage of learning in which the cognitive structure further accommodates what is reflected and therefore re-interpreted/re-learnt.

The transformative role of reflection at the third and fourth stages of learning may be equated with reflection-on-action, and that of its role as housekeeping where past experiences are brought in combination with some futuristic anticipation so as to derive more meaning or better/different meaning. At the stage of transformative learning, it involves more critical overview of the situation, and relating it to professional or social situations, and facilitating transformation or, as Habermas (1971) noted, to emancipation (emancipatory human interests). Different strategies have been advocated for this: group consciousness-raising (Mezirow, 1990), critical incident analysis (Brookfield, 1990), learning journals (Moon, 1999), and others.

Jonassen (1994) in the schematic web of constructivism underlines the role of articulation and reflection in both internal negotiation and social negotiation of meaning, and distinguishes between experiential knowledge and reflective knowledge (Jonassen et al, 1995). Garrison and Anderson (2003) further pursued education as inquiry and for inquiry (Lipman 1991), and based on reflective thinking of Dewey (1933), presented the practical inquiry model for online learning in which critical thinking is viewed as ‘an inclusive process of higher-order reflection and discourse’ (p. 56). While reflection is in the individual domain, discourse falls within the public domain.

**Implications for Online Distance Learning**

Online distance learning is the latest development within non-classroom based modes of communication and interaction. Throughout the developmental history of distance
education – from conventional distance learning to present online distance learning – there had been debates concerning the role independence and interaction play in self learning. Distance learning involves independent learning, and collaboration through mechanisms of learning centres, media and self help groups facilitates interaction, which further facilitates sharing of views, social knowledge construction and negotiation. It is in place to draw attention to the work of Daniel and Marquis (1979) who pleaded that interaction is necessary to socially and culturally ground the content of learning – interaction strengthens independence. Further, the works on approaches to learning revealed that those with deeper approaches to learning were comparatively more independent than others. Increasing ‘independence’ coupled with greater ‘control’ over learning lead to higher academic integration and higher order learning.

Individual responsibility and social responsibility of learning have been advocated by Garrison and Anderson (2003) through individual critical thinking and discourse in the community of inquiry respectively. Based on the discussions in the preceding section, in the framework of online CPD given below, we contended that reflection takes care of both the roles of individual and social discourse in both online and offline contexts leading to enhancement of individual cognitive structure. The role of reflection in distance learning is suggested in Figure 3 in which both individual presence and curriculum design presence determine the learning approaches adopted. These significantly influence the stages of learning one is going through as also how learning is being represented. Both mentoring and individual/group reflection facilitate appropriate learning approaches, stages of learning and upgradation of learning. Reflection plays a critical role in the change of cognitive structure through independent study, online collaboration and negotiation, and knowledge construction and negotiation in the community of practice.

![Figure 3: Role of reflection in distance learning](Source: Panda, 2003)
Cornford and Pollock (2002) in a critical work contend the conventional campus as a resourceful constraint, and posit that in spite of the limitation of the campus, it performs certain higher order functions which virtual/distributed learning may not: mutual peer surveillance, lateral relationships between teachers, and continually reconstructed knowledge pool. These, coupled with the fact that professional development is a continuing process and that much of this development takes place offline, suggest that there is the necessity of offline individual reflection and collaborative negotiation in the community of professional practice. How do independence and interaction fit into this interpretation? Thorpe (2002) contends that while interaction was earlier used to foster independence, now one has immense possibility of online interaction while still maintaining one’s independence, and that independent study is used to support and sustain interaction. Garrison and Anderson (2003) take the discussion on discourse and meaning making in online learning community further through their framework of cognitive presence, teaching presence and social presence (Figure 4).

In their online community of inquiry, cognitive independence and social interdependence occur simultaneously. In this community, individuals have full responsibility and control of their learning while diagnosing misconceptions, challenging accepted beliefs, and negotiating meaning. Their model suggests to us that within the individual cognitive structure, one can maintain independence and employ reflection even while undertaking online and offline collaboration.
Even if professional practitioners interact online and undertake individual reflection, their interaction should take place in the community of practice. While there is no denying the fact that the community of practice by itself exists, what is important is organised effort to develop the sense of community in the professional community of practitioners. Wenger’s (1998) social theory of learning advocates legitimate peripheral participation in which the participation leads to transformation of identity in a community of practice. Identity of participation is required for learning, and learning leads to formation of professional identity. For him, learning as social participation comprises meaning, practice, community, and identity; and shared enterprise is the motto the community of practice. Based on this concept of community of practice, as also the conceptual formulation of situated cognition and situated learning (Brown et al, 1989), a framework for online constructivist continuing professional development is given in Figure 5.

Figure 5 articulates a transformative learning environment in which reflection plays a critical role. In transformative learning, one must be aware of one’s own and others’ assumptions, and transform one’s own frames of reference so as to best appreciate one’s own experiences. It may be noted from Figure 5 that course design and course content constantly interact with the individual cognitive structure and learning, and individual reflection facilitates transformative learning, and personal and professional development and identity. This process both takes place and is facilitated by community of practice and situated learning on the one hand, and online collaboration, interaction and mentoring on the other. What is important is that for online constructive professional development to happen, the course design presence, individual cognitive presence, social interaction presence in both online learning community and offline community of practice, mentoring presence, and ongoing framework of transformation of professional identity need to be designed. These aspects have been articulated in the further works of the author (Panda, 2004a, 2004b).
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