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ABSTRACT

This paper is a critique of problem-based learning and focuses on, first, the concept of life as problem-governed and professional practice as problem-solving; and, second, the utility of problem-based learning as a pedagogical approach in pre-professional training. The paper suggests that a problem-based approach to professional education is ontologically narrow and epistemologically inconsistent with the lived nature of professional practice. Problem-based professional practice is seen as supporting the professional role as the rightful epistemic authority, thus perpetuating a class of professional elite who dominate social order and knowledge. The paper also suggests that problem-based practice and problem-based learning presume the possibility of a detached knower, separate from time, place, social position, body, gender, and interpersonal relations and thus the perspectives, intentions, and priorities of the individual are excluded by the pressure for a productive solution. Several questions regarding problem case examples are raised: who produces the cases and what inclusion and exclusion criteria are used; whether pre-framed questions allow student professionals to frame their own experiences; and whether a problem case can authentically represent human experience. (Contains 36 references.) (JLS)

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A Critical Investigation of the Problems with Problem-Based Learning

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A Critical Investigation of the Problems with Problem-Based Learning

In recent decades, since Schon (1983, 1987) and others have drawn attention to the dynamic nature of professional practice as a process of framing ill-structured problems and solving them in unpredictable “messy” contexts, the conceptualization of professional knowledge has shifted and with it the assumptions about how best to train professionals. A growing body of literature supports the value in professional education of what has come to be known as problem-based learning (Albanese and Mitchell, 1993; Norman and Schmidt, 1992; Walton and Matthews, 1989).

Problem-based learning (PBL) typically organizes curriculum around a series of “cases” profiling dilemmas of practice which student professionals read, “diagnose” and discuss, exploring strategies for solving these problems. Bligh (1995) describes problem-based learning as an approach which helps the learner frame experience as a series of problems to be solved, where the process of learning unfolds through the application of knowledge and skills to the solution of “real” problems in the contexts of “real” practice. Problem-based learning is often acclaimed in terms such as “active, self-directed” (Bernstein, Tipping, Bercovitz, and Skinner, 1995) and “student-centered” (Mann and Kaufman, 1995). In contrast, “traditional” teaching approaches are characterized as “didactic and directive”, emphasizing recall of theoretical knowledge (Bligh, 1995; Mann and Kaufman, 1995). Advocates claim that PBL has revolutionized medical education (Ostbye, Robinson, and Weston, 1994). This approach enjoys wide application in graduate business administration programs in North American universities, and has been used with educational administrators (Bridges, 1992; Bridges and Hallinger, 1991). Recently, problem-based

learning has been adopted in teacher preparation programs (Hughes and Sears, 1994; Casey and Howson, 1993).

Some critical evaluation of problem-based learning has emerged, but tends to focus on student outcomes, conceptualized in terms of the amount of knowledge residue generated by problem-based learning compared to lecture approaches. Critics seem to accept the philosophical premise of PBL, and quibble only about particular practices within its application. For example, Vernon (1995) reports, among its perceived advantages in medical education, that problem-based learning results in improved student motivation, teamwork, and development of doctor-patient relationship skills. The disadvantages Vernon cites include a faculty perception of student "knowledge gaps", problem-based learning's reinforcement of the "wrong information," and the "inefficient" use made of "valuable time". What is unclear is the context for such assessment: in particular, what approaches to professional education are being compared to PBL, and the criteria used to judge and conclude "improvement" in student achievement and attitude. Also unacknowledged are the epistemological assumptions embedded in a problem-based approach to educating professionals, including the construction of a particular epistemic authority.

In this paper, we focus our critique of problem-based learning along two main dimensions: its fundamental perspective conceptualizing life as problem-governed and professional practice as problem-solving, and the use of problem-based learning as a pedagogical approach in pre-professional training. We suggest that a problem-based approach to professional education is ontologically narrow and epistemologically inconsistent with the lived nature of professional practice. We hasten to emphasize that our intent is not to argue against problem-solving. We are not trying to eradicate the activity of problematizing as a way for humans to engage the world, including those whose work positions them in helping relationships with others. Nor are we advocating passivism or intellectual torpor in the face of

cruelty, injustice, misery, or disease. Crises of human pain, privation, and suffering demand alleviation, moral dilemmas of competing claims demand choice, technical snarls demand untangling, and necessity demands invention.

But we believe that in the evident rush to endorse and universalize PBL, the existence of problems or dilemmas and the question of most effective response to problematic situations have shifted from consideration as a part of the flow of human interaction confronting a professional, to be placed centrally and perhaps even definitively in professional practice. We do not refute the existence of problems, but we do wish to examine critically how those problems are constituted, whose epistemic authority is reinforced in their construction, and what subjectivities and activities emerge through life predicated on professional problem-solving. As a discourse increasing in circulation and defenders, PBL wields considerable potential power in determining 'legitimate' knowledge, and in shaping professionals' thinking and intentions. This paper will focus on how problem-based learning in professional education teaches through problems abstracted from embodied social contexts and objectified for the managing gaze-in-training of pre-service professionals, serves to reinforce the dominance of the professional elite, and ensures the continued epistemic privilege accorded to performativity and control. We challenge certain metaphors and presuppositions embedded in problem-based learning from the vantage point of alternate, more ecological and inquiry-oriented visions of a world which is not shaped according to the structures of problems awaiting the expert professional's solution.

In the first part of our discussion, we examine the "problem-based" perspective and its formation of particular professional subjects, relations, and activities. In the second part we assess the pedagogy of problem-based learning, questioning its presuppositions and procedures in terms of professional knowledge. In the third part we outline selected alternative philosophical perspectives regarding problems and

professionals' roles, and suggest alternate curriculum approaches to professional education that do not valorize problem-solving approaches to professional education. Our intent is to help open questions about professionals' knowing and becoming processes that are left invisible in the problem-based learning vision of training.

Professional practice as boldly solving the world

Problem-based learning inherently centralizes professional practice in the activity of naming and solving problems. What does it mean to view an experience as a "problem"? The professional activity that Schon (1983) terms "problem-framing" places boundaries around a slice of fluid experience, transforming it into a fixed, stable structure with a linear narrative. This story is gathered into the eye of the problem-framer, who determines the protagonist and the essential causes of conflict or dilemma, then sets in motion a sequential series of actions towards resolution. Problem-framing designates what is normal and what is deviant. In fact, problem-based professional practice seeks the deviant in order to rehabilitate it. The problematiser presumes to ascertain the state of actual affairs from a stable (undefined) point of gaze. As Scheman (1993) has argued, in this gaze is embedded the rational mind posited by Descartes, standing over and in control of a mechanical world of orderly separation, while everything else -- the disorderly, the passionate, the uncontrollable -- is cast into shape as a "problem". In fact, in a "problem-framing" view of life, the world is locked into irrational and undesirable chaos that needs to be brought into redeeming order. A series of discursive oppositions underpin such a view: chaos/order, sickness/health, madness/sanity, irrational passion/reason. Michelson (1996) situates these dualisms in a gendered, cultured, and classed politics of knowledge, arguing that the problems discerned by the elite white professionals -- "the disorderly bodies of women, the disarray of working class

neighborhoods, the steamy swamps of the colonial world" -- reflect an attempt to rationalize society and suppress all that is associated with bodily expression and desire.

Problem framing or setting is a splitting activity, viewing life as alternating between equilibrium (normalized as natural and desirable state) and disequilibrium (tolerable only as temporary disturbance). Within this framework, problem-based learning splits the Real (problem-riddled living) from the Ideal (harmony, peace, joy, and comfort). The Real is configured as aberrant or incomplete, while the Ideal hovers on a future horizon of possibility, eternally split away from the present. The object of desire is in front of, not in or with, the subject whether this subject be a person, a single encounter, or a complex slice of human experience. Thus in problem-centered living, experience can never be whole. From a psychoanalytic perspective, Scheman (1993) suggests that in problem-framing, humans split off from their rational selves those parts that threaten the harmony and control of these selves. The split-off parts are projected onto stigmatized others as "problems":

Those who play the objectified others in problem situations embody some aspect of humanness from which the authorized knowers have isolated themselves in order to claim full rationality and universality. (Scheman, 1993, p. 110)

Lacan (1977) argued that human demand, such as for "solution", in itself bears something other than the satisfaction which it calls for. Desire is a need alienated from the subject by demands, which produce a repressed something. Following this reasoning, to sustain the illusion of "normalcy" as a problem-free condition characterized by equilibrium, order, and control, humans must repress their own contradiction and multiplicity, including their desire, which will continually be manifested in problems splitting them away from the satisfaction of their demand for order. Further, when human desire focuses on the object of eliminating

problems, it continually foregrounds obstacles which prevent the satisfaction of that desire.

Underpinning the problem-solver's desire can be discerned what Lyotard (1984) identified as modernity's grand narrative of emancipation. The essential project of science, and professionals as official practitioners of scientific knowledge, is to liberate humanity from its problems. A problem-based perspective attempts to reduce mystery, situational ambiguity, messy dynamics of human interaction, and life's essential difficulty to a pipeline of knowable and resolvable problems. Behind these "problems" lurk the specters of quandary, crisis, mess, emergency, suffering, and regression. Professional practice becomes analogous to a thoroughfare: the point is to keep the traffic moving without obstruction, to perpetuate the modernist pursuit of efficiency, predictability, productivity, measurable concrete outcomes, and unitary meaning subordinated to instrumentality. Fueling the modern rush to domesticate the wilderness, the world of human and natural struggle, is intolerance for mystery and deferral, a longing for closure and certainty, perhaps even a cowardly fear of difficulty. Control is the dominant metaphor, and management of civil society the governing discipline.

Unfortunately in a modernist age inheriting the epistemological dualisms of Enlightenment, to be critical of such a view is to argue against progress and emancipation, to favor obscurantism and superstition over enlightenment, and to support passivity and acquiescence to oppression and pain. The dominant paradigm that suffering needs to be, or even can be, eradicated seems on its face to be incontestable. A surgeon's steel should cut out offending tissue; a therapist's probing should heal painful memories; an agriculturist's technology should irrigate farmland in colonized communities; a teacher's instruction should end a learner's struggle with the unknown. The competency of a professional is judged by ability to find, define, and take action to solve human problems. Once conjured to presence, a

problem unleashes a sequence of behaviors. Activism is privileged; intervention is taken for granted. The underlying principle of performativity valorizes efficiency/inefficiency as a dominant category (Usher and Edwards, 1994).

Knowledge is commodified so it can be produced, transferred, and consumed in the service of diagnosing and eradicating problems. Even reflection and innovation are harnessed to the urgent preoccupation to find more effective, efficient, novel solutions. The competent professional is cast as the heroic problem-solver, bringing salvation to the passive others in the “problematic” situation, incarnating human desire for mastery and control based on normative ideals for the world.

Problem-based professional practice is thus a discourse constituting the professional as the rightful epistemic authority, thus perpetuating a class of professional elite which dominate social order and knowledge. A discourse creates a field of knowledge by defining what is possible to say or think, declaring the bases for deciding what is true, and authorizing certain people to speak while making others silent or less authoritative (Foucault, 1974: 49). Thus a discourse is highly exclusionary, and usually conceals its own mechanisms for maintaining dominance. In the problem-based discourse, solution is “truth” and the professional is custodian of the truth. The professional’s normalizing gaze divines, adjudicates, and classifies the world’s problems, then deploys its disciplinary knowledge to systematically reform and regulate these problems. Human desire for closure and elimination of perceived obstacles helps consolidate power in the professional’s knowledge (to the extent that knowledge sustains its credibility and perceived usefulness in a particular society). The professional is empowered as the active subject administering to the client, who is disempowered as passive object. Important questions are, Who is naming the problems? What are the implications of allowing professionals to name the problems and making the experts the ultimate salespeople who name needs for their products? Is it possible that experts

will create problems they are good at solving simply so that they will retain and expand the extent to which they are viewed as necessary?

The authority of the professional's knowledge and viewpoint is produced and reinforced in the act of solving problems. The resistant, the non-normative, and other challenging voices are designated deviant or diseased, objects to be cured. Thus professional groups can use the rhetoric of problem-solving to disguise their de facto political and cultural hegemony. Ladd (1983) argues that professional dominance extends to the realm of morality, for problem-framing-solving establishes professionals as "moral arbiters of what, in respect to professional services provided, is morally good for their clients, and perhaps even what is morally good for society" (Ladd, 1983, p. 12). Professionals are left with a monopoly on the services to provide that good.

Conversely, professionals are shackled by their own privilege. Great responsibility is invested in those expected to perform healing miracles as self-determining expert agents. Consequences of failure incur public suspicion of professional motives, indignation, even rage and lawsuits. The "white knight" syndrome displaces impossible demands onto professionals to fix perpetual human difficulty. This not only removes from the public both the liability and responsibility of reparation and sharing in the world's suffering, but also perpetuates the comfortable illusion that prediction and control are possible. Further, the myth of the expert solver disallows the professional from acting collaboratively as a participant in the situation, partly constituted by and helping to constitute the structures, actor relations and discourse of the situation itself. Instead the professional is configured as transcendent, isolated and "professionally" distant from relational interaction in the situation. Inherent in this myth is the belief that the self is capable of dispassionate, disengaged, "objective" participation, what Addelson (1994) calls the myth of the "judging observer". And paradoxically, while

professionals subject clients and their experiences to the judging gaze of their vested authority, the professionals in turn are subjected as servants to sate the clients' desire.

Problem-based practice and problem-based learning presume the possibility of a detached knower, separate from time, place, social position, body, gender, and intimate relations. Problem-framing and solving is believed to emanate from a privileged normative standpoint which is generally unreflective about its own situatedness. The causal role of the professional self implicated in the history of the situation is generally invisible and irrelevant, as is the process through which the professional conceives a particular alignment of conditions as "problematic". Similarly the perspectives, intentions, desires, and priorities of the various actors forming the network of any situation, including the professional taking responsibility for it all, are generally rendered irrelevant by the push for productive solution that regulates problem-based practice.

Questioning the pedagogy and procedure of problem-based learning (PBL)

Casey and Howson (1993) describe the goal of problem-centered methods of preparing teachers as developing "creative, independent problem-solvers able to harness their creativity through organization and planning" (p. 361). The instructor presents an "open-ended problem." The pre-service student teachers then "make careful observations, generate predictions based on these observations, test the predictions, and evaluate their predictions in light of the results" (Casey and Howson, 1993, p. 364). In short, student teachers are taught to perceive and respond to the world of teaching in rational, systematic thought processes. The process is well-intentioned and logical.

Several questions should be raised about the construction and use of problem cases for education professionals. The first is, *Whose gaze has divined these*

problems and produced the cases? Usually currently practicing professionals, often working with representatives of the academy. The problem cases presented to students are presumably selected from those named as most crucial in the judgment of these authorities. In doing so, these authorities control what is to be titled “problematic,” what is excluded from the realm of problems and, thus, rendered invisible from view, and what complexities are instrumentally “manageable” and can be eliminated. They have made future practice normative, but the norms they utilize to do so are based on a historical past -- their own experience shaped by actions they generated from formal structures of knowledge, structures usually disseminated from a professional discipline interested in consolidating power in its own expertise. What must be unpacked is the intention and desire of these authorities, whose perception of harm has incited the label of “problem”. Perhaps in many professions there may even be found examples of “problems” which in fact represent difference or perceived threat to the very structures that secure the authority of the professionals. The same questions posed by Scheman to deconstruct problems normalized in the discipline of philosophy should be asked of problems formulated to prepare professionals for practice: “Whose problems are these, out of whose experiences do they arise, and from whose perspective are they salient?” (Scheman, 1993, p.1). And, whose needs and whose capabilities are reflected in the composition of the problem?

The use of problem cases “pre-shaped” by authoritative sources and dispensed to student professionals points to a second key question: *How do pre-shaped problems help student professionals learn how to frame experience for themselves?* It can be argued that student professionals need to learn how to listen to and sort among the divergent perspectives and conflicting priorities in any complex situation of practice, including their own, and to think and act in ways that allow a flexible view of a situation that will accommodate emerging details. But pre-determined cases conceal

the process of their own construction. The problem appears fixed and self-evident, fostering a view of practice in which cookie-cutter problem-frames are retrieved from a vast repertoire and wielded to carve out sites for professional intervention. Rather than learning to generate flexible new ways to discern their practice, student professionals are taught existing perceptual frames that are essentially detached from corporeal experience, idiosyncratic situational detail, and collaborative dialogue. Far from enabling students to develop the ability to question their own participation and perceptual bias in a situation of practice, pre-determined problem cases preclude the existence of such dimensions. Focus is immediately thrust into analysis of what is, of what parameters constitute the 'problem', rather than how they got there.

The actual process of constructing cases for use in problem-based curriculum raises a third question: *To what extent can a problem case authentically represent human experience?* Problems chosen for PBL curriculum are constructed through strategies of regimentation and containment. Human experience is rendered fixed and knowable from an Archimedean standpoint. Using such sample problems objectifies situations by power through observation, and inscribes subjects as cases gathered into the authoritative gaze of the student professionals. As Foucault writes, the case "at one and the same time constitutes an object for a branch of knowledge and a hold for a branch of power" (Foucault, 1979, p. 191). Meanwhile, the student professional is taught that problems can be "known" and managed without bodily and intersubjective immersion into them. Thus in working with such bloodless recreations, professionals are taught the process of making problems inert, as well as the moral and epistemological rightness of controlling and stabilizing the meaning of a situation in order to manage it.

Another difficulty with the authenticity of PBL cases is that the problem's context is necessarily relegated to the shadows of background. Often cases may

represent bits of human life torn away from context, or contain only a sketchy background of socio-cultural-historical-political details, the flow of power, or the positionalities and network of actors and objects creating and continuing to live out the situation. In isolation, problems appear deceptively antiseptic and “manageable”. Friedman (1993) illustrates how a problem case provokes dramatically different interpretations as contextual details of perspectives, history, possible alternative consequences, and different human agendas creating conflict are layered into its presentation.

Even when substantial narrative and contextual detail is provided in the cases comprising PBL, the student professional reading and attempting to “solve” a case is not *the* problem-solver. Instead, the student comes to the problem in the role of a spectator. This discussion leads to a fourth question, namely: *How does the student professional participate in a pre-constructed problem case?* As a kind of voyeur in problem-based learning, the student professional is taught to maintain an epistemological separation from the world. This stance perpetuates a desire to coldly know and control without being known, remote and protected (Parker, 1993). However vicariously or empathetically that student engages with the case, the student will perceive and even shape crucial dimensions of the problem fundamentally differently than the same student would as an actor in the real-life situation who is thrust into the real problem (and living the full reality of the problem’s context). Problem-based learning allows consideration of a single experience in a cerebral, rational way, detached from desire. Surely this analysis produces fundamentally different action choices than those generated by an actor’s visceral involvement in the immediate experience, which is sensed “through the skin”, unfolds simultaneously with multiple other “problems”, and is invested with other actors’ intersecting intentions and desires. As a spectator of one fragment abstracted from the experience, the student is action-describing; the actor in that

experience is action-guiding. Problem-based curriculum works from the presupposition that through participation in intellectual problem-analysis, student professionals may acquire a repertoire of structures to transfer in framing and solving 'problems' of real practice. But to assume that the perspective of a spectator can be transferred later to that of an actor is a basic fallacy (Hinman, 1994).

So a logical fifth question is, then: *To what extent does the learning activity involved in solving a problem case help prepare student professionals for their work in practice?* Fins (1996) claims that applying strategies derived from pre-determined principles is inconsistent with real world practice. Using the example of medical practice, Fins shows that clinicians do not fix on a pre-diagnosis and then make the clinical situation fit the parameters of their conclusions, but approach the care of patients inductively. They speculate hypotheses, then adjust their assessment as they observe further the facts which unfold in an emergent dynamic network. The particulars are determinative to the integrity of the process.

Problem-based learning is embedded in what cognitive psychologists term the "disequilibrium" model, which holds that individuals gain understanding through problem-solving, or seeking freedom from difficulty. The limits of this model of learning lie in its orientation to "equilibrium" as an ideal or even a natural state for human beings in relation to their environments. An alternate perspective posed by Prawat (1993) is to view impasses or "dissonance" in experience not as obstacles to be eradicated, but as possibilities for creation. Through this lens, a human being might actively seek to interrupt precisely that status quo of equilibrium, seeking freedom through imaginative possibility. Instead of convergent problem-solving, therefore, the learner is actively engaged in divergent exploration and inquiry, seeking to raise questions, create dissonance, make the familiar strange, and otherwise interrupt the harmonious flow of problem-free existence. Viewed as a process of pursuing

“imaginative possibility”, learning becomes far more integrative, inclusive, creative, and liberating than problem-based approaches will allow.

Work on situated cognition and enactivism contends that knowing is embodied, and fundamentally rooted in context. Cognition, as embodied action, both poses the “problem” and specifies available paths of action (Varela, Thompson, and Rosch, 1993). Everyday situations confronting practitioners are lived through the skin. Emotions, sensori-motor engagement, personal dispositions, the actor’s sense of self, the actor’s known repertoire of physical and mental capabilities, the possibilities uncovered by the actor’s moment-to-moment actions in that situation -- all the dynamics folding the actor bodily into a lived moment fundamentally shape that actor’s perception of and response to a ‘problem’. The lived moment is also temporally bound, embracing both the actor’s history with situational elements, as well as the actor’s anticipation of *future* life with the consequences of any choice made in this moment. Furthermore, the actor invests intentions in a particular situation, including issues of personal need, identity, relationship-building, others’ needs, and desired general outcomes. The actor balances these various intentions, many of which may be brought into conflict with a particular choice of action, with the agendas of other actors who help construct this moment. How can any individual who is not embedded in this multitude of dynamics possibly understand or even appreciate the essential intertwining of this context with the perception of the problem and the process taken to choose and act?

In problem-based learning, the actor is removed from this sensing and implication in the dynamic of the situation, and the problem becomes a disembodied rational exercise. Pressure exerted on any one dimension in a “problem-solving” gesture immediately changes the configuration of the system and shifts the apparent point of crisis. Professionals need to learn how to study such multi-layered situations of practice, assess their own situated perspective as actors in

these situations, and explore the consequences that unfold in various aspects of the system when different actions are taken. Such study and experimentation in the intricate and fluctuating systems of dynamic human environments in which professionals practice would better prepare professionals than learning how to “solve” single problems or cases isolated from the entire system. How helpful can practice in solving problems or a repertoire of “solutions” be, when in actuality so much professional decision-making is situated in and inseparable from the tools, community and activity (Lave and Wenger, 1993) defining their context of practice? What of those situations in practice of life that cannot ever be “solved” but must be lived through, suffered with, entered and endured? Where is turbulence, continuous change, the dynamic multi-layered flux of real human dynamics in such a worldview? In the emphasis on activism in problem-solving, other kinds of “actions” are rendered less legitimate (i.e. reflection, listening, living beside a situation, not solving it) in problem-based learning. What happens to “waiting,” patience, or at least stillness as appropriate responses to an apparent difficulty or dilemma? What of moral dynamics? Is any action toward the solution of a problem a correct action? What is missing from problem-based thinking is recognition of a world and diverse selves that are fluid and dynamic, and knowable only through particular, provisional knowledge that must be allowed to emerge and shift and ultimately accept mystery.

Alternatives to problem-based thinking

A fundamental ethic of problem-based practice is *prima facie* that difficulty must be “solved” or eliminated. The modernist Western devotion to intervention and control tends to treat all difficulty as physical, material, “real,” and intolerable. Many alternative perspectives have been offered, towards a more integrative, ecological, inclusive approach to life’s difficulties. Most of the alternative approaches to

discerning and engaging life's 'problems' outlined here do not deny the fundamental principle that life is difficulty. The difference is the lack of compulsion to inspect, subjugate and govern from a detached 'rational' position. Instead, the profoundly embodied and emotional nature of immediate experience is affirmed, and moments of connection among humans and the natural world are venerated as the source of wisdom, and understood to be inseparable from their particular social and historical settings.

The situative perspective (Lave and Wenger, 1991; Greeno, 1997) emphasizes how the activities of apprehending a "problem" and choosing subsequent action are intimately entwined with the network of people, objects, and meanings creating the moment. Each learner develops and uses strategy idiosyncratically. Each is shaped by particular social, cultural, and historical patterns that affect the meaning ascribed to particular moments in any "problem" with this history with this context on this day. Four characteristics of everyday choice-making, as theorized from a situative perspective by Thrift and Pile (1995), are relevant to understanding the work of professionals in practice: (1) Understanding (and therefore strategy) is created *within conduct* itself, which flows ceaselessly, which is adaptable but not often deliberately intentional, and which is always future-oriented; (2) Understanding is essentially corporeal, often "beyond the reach of consciousness and explicit statement"; (3) Understanding is worked out in "joint action," always binding the actor to others in shared understandings of what is real, what is privilege, what is problem, what is moral; and (4) Understanding is situated and cannot be abstracted from its constituting time and space. Thus, a problem situation is inseparable from the actor-perceiver and the perceiver's past, present and future actions. Therefore a solution cannot be derived from "outside" the problem, then "applied" to that problem as a rational construct.

Closely related is the “enactivist” perspective of cognition (Varela, Thompson, and Rosch, 1993). Enactivism suggests that life is an emerging dynamic, a network of actors and objects that is interrelated in particular socio-cultural-historical interactions. Problems or possibilities are “enacted” within this dynamic network. The perceiver-knower is implicated as an active, creative agent who embodies knowledge while generating intentions that guide choices for subsequent action from this embodied knowledge. Perception unfolds continually in “perceptually guided action”. Thus problem-perception and response is embedded in and revealed through emergent networks of activity.

A hermeneutical response to life’s difficulty is not to solve it but to understand it, interpret what it is, and to seek a deeper understanding of one’s changing and dynamic relationship to the changing and dynamic situation. Jardine (1994) argues that “technical-scientific discourse” which forces life’s mystery into a problem-solving project represents “the relentless human lust to render the world a harmless picture” (p. 118). But life’s ambiguity, suffering, and mystery must be accepted and honored as the core of generativity: “The returning of life to its original difficulty is a returning of the possibility of the living Word” (p. 119).

Spiritual traditions often emphasize surrender to difficulty, not necessarily to escape life’s problems in a pursuit of heaven, but to engage life more deeply and thus to approach a more profound understanding and humanity. From a Christian perspective, Taylor (1996) suggests that humans must “find in suffering and death a place to affirm something that matters beyond life and on which life itself originally draws . . . The point of things isn’t exhausted by life, the fullness of life, even the goodness of life” (p. 10). Moore (1992) deplores the professional rush to transform the flux and pain of life into solve-able problems. He explores a professional response of “compassion” (suffering with the one who suffers), consolation, and solidarity. Suffering, he explains, is sometimes better embraced as a necessary

condition of life and as an opportunity to grow. The Buddhist response to overcome suffering is to seek to overcome desire. The eight fold path to nirvana offers a way of extinguishing the self and reducing suffering by overcoming the desires which conflict with the facts of existence. The emphasis in the eight fold path (right views, right intention, right speech, right action, right livelihood, right effort, right mindfulness, right concentration) is on “right thought” -- awakening to the immediacy of the moment, and losing the self in a complete interconnectedness with all living things. Cognitive theorists have shown close links between Buddhist thought and enactivist perspectives explaining the process of engaging life’s difficulty as an emergent network (Varela, Thompson, and Rosch, 1993).

These alternate belief systems and theories of knowing help broaden the view of professional practice. Undeniably, problems in the human, natural, and technological worlds exist which must be confronted. Taken-for-granted conditions must be problematized. Responsible citizens, including specialist workers such as professionals, participate actively in both discerning problems and generating alternate possibilities. But, as is evident in various systems of spiritual, postmodern, hermeneutic, situative, and enactive thought as briefly outlined in the preceding section, a way of living and working that is driven by solely problem-framing and problem-solving is exceedingly narrow and flat, subordinating all of life’s rich meaning and the complexities involved in knowing/acting processes to immediate demands for utility.

Towards alternate methods of educating professionals

Given the pervasiveness of problematic situations in professional practice, then, how can professional training help prepare people to participate in practices that do not perpetuate inequity, fragmentation, alienation, control and domination through the exercise of problem-solving? Part of our critique of problem-based learning is the

reduction of complex human reality to manageable “cases”, with accompanying deletion of detail, and the isolation of these cases from context and from actor. There are alternative approaches to helping professionals work with problems that may be more integrative, inclusive, and authentic.

The first is to emphasize not the analysis of “problems” identified by others, but different ways of reading the multi-layered dynamics of a situation, and how they are interconnected with these dynamics. Working from the situative and enactive theories of knowledge construction, professionals need practice interpreting unfolding situations of practice including their own interactions *as they participate in the ongoing shaping* of these situations. Fins (1996) describes clinical medical practice as continual inquiry to determine the likely outcomes of responding with one action or another, attending carefully to narrative particulars of various players in the situation, and working through emerging details. He deplores the mythology, on which medical training is founded, that practitioners should learn and apply principles derived from one problem to a new situation.

Second, student professionals need to learn not only how to “see” presumably problematic situations confronting them from different perspectives, but also how to confront their own ways of perceiving and responding these situations. Such critical reflection is best encouraged as an integral part of internship, where student professionals are immersed in their own networks of action. The reflexive viewpoint, continually questioning the knowledge base from which conclusions are drawn and decisions made for action, is supposedly the goal of “reflective practice” which has received much attention since Schon (1983) first introduced the concept of reflection-in-action. Care must be taken not to focus too narrowly in student professionals’ reflection on “what worked” and “what didn’t”, which orients thinking back in instrumental problem-solving without the necessary self-

reflexivity that asks, what does “it worked” mean to me? What am I “working” on, and why?

Third, in an effort to dismantle the isolated, objective viewpoint of the privileged professional “expert” solving the problem of the dependent objectified “client”, student professionals must be able to collaborate effectively with those they are in a position to help. Sensitive communication skills are critical, far beyond the gloss requirements for warm “bedside manners” or appropriate euphemisms for disseminating painful news. Some student professionals may need to develop basic abilities for creating authentic relationships. They may need to be immersed in situations that help them learn how to establish trust and open conversation with those they are working; to listen carefully, clarify and interpret various perspectives in the situation; to communicate their own emerging understandings; and to seek ways of building interdependent relationships by bringing their own expertise to the situation in ways that are helpful, without dominating or eliminating others’ contributions and concerns.

Finally, there may sometimes be pedagogical purposes best served through student analysis of pre-determined cases. But when descriptive situations are presented to students, they require a great deal of narrative and contextual detail, providing as many perspectives as possible. Rather than casting a student professional into the role of the omniscient “solver” in these cases, they might serve a better purpose as stories of how a particular person or group of people defined a situation and responded to it. Pre-service professionals could then spend time analysing how these problem “cases” selected for study have been constructed, and what assumptions about right practice and ways of viewing the world are embedded in their frameworks. Students can explore ways the problem-namer lives within the situation configured as problematic. If the accounts are not presented by making clear a variety of perspectives, students can re-construct different voices in the case,

and proceed to try interpreting the histories, intentions, priorities, concerns and interconnectedness of these different voices.

The challenge for professionals and educators of professionals is to resist the culture of performance, control and measurement which informs the logic of problem-based learning. As we have argued throughout this paper, current norms of professional practice perpetuate inequity and maintain the cultural superiority of elite professional knowledge. Can we imagine a radically different professional subject, constituted by radically different norms and authoritative on radically different grounds? Addelson (1994) suggests that professionals need to be rehabilitated as “sensitized people”, not knowledge makers -- an assertion which raises questions of how professionals are sensitized, and what they are sensitized to.

The perspective animating certain spiritual and hermeneutic approaches to life offers liberation from control, predictability, and, by implication, the almost unbearable responsibility that falls to the “professionals” in exchange for the social deference accorded to the epistemic authority they wield. This perspective celebrates, rather than seeks to regulate and “solve”, the energy of dynamic human intersubjective life. This energy is unpredictable and presents inherent difficulty. It must be engaged through the skin, sensory, relational and emotional immersion, not rational detachment. It cannot be tamed but must be skillfully negotiated the way a kayaker rides white-water rapids: with strength, balance, grace, and readiness. Learning to live and practice on the edge of surprise, to engage life in its essential difficulty is “the embodiment of true liberty . . . which arises from the awareness that at the heart of life is a contradiction (Smith, 1997, p. 12).

For professionals to embrace the fundamental contingency of life, and to accept the frequent incommensurability of what is present, is to embark on a way of practicing that does not seek to control but to participate with others in an emergent collective network. When human lives are conceived as passages of discovery and

creation, the responsible work of professionals is contributing to generating social order. Problems may require not to be solved, but *dissolved* by altering our fundamental thinking about life and the role of those who would help transform the world towards fuller more abundant life.

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