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A Systemic Framework for Case-Based Classroom Experiential Learning

Two figures accompany the paper and are attached at the end, with insertion instructions given in the main text.

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ABSTRACT

In the realm of education, a common thread which unites inquirers, their critics, and academics in general is the concern to minimize the gap between classroom and real world so that students are effectively prepared for the demands of real-life problems. The present paper focuses on what can be done in the classroom in order to thus prepare students - prior, that is, to even an intermediate real-world experience such as an internship. Case-based classroom experiential learning is discussed as one fruitful approach. A systemic framework for such learning is presented that renders the approach relevant for consideration by the systems movement. It is argued that classroom teaching based upon this systemic framework contributes a qualitative improvement to education in general.

Keywords experiential learning; cases; pedagogy; systems design; educational design

Introduction

The systems movement began the new century with education very much on its mind. It was argued that the higher education system appears ill-equipped for contemporary challenges (Jenlink, 2001). Public committees, charged by government with inquiring into the future of education, were criticized for laying out a vision of this future in questionable, archaic, or simplified terms (Banathy, 2001; Horn, 2004). Their understanding, it was argued, not only does not match, but contradicts the contemporary and foreseeable dynamism inherent in the world for which graduates are supposed to be prepared (Banathy, 1999). What is more, the very idea of the systems approach, and the skills required to develop systems thinking, appeared to be poorly understood by the inquirers (Ison, 1999) – to the extent that the approach appeared to be understood in terms opposite to what system theorists would conventionally agree (Weil, 1999).

A related field, operational research (OR), also began the new century contemplating 'what makes for good OR education' in the face of reality's messes which graduates should supposedly be able to tackle (Williams and Dickson, 2000). Williams and Dickson suggested that classroom exercises, designed 'to combat the problems caused by a lack of experience', could well contribute to enhancing students' learning experiences. They contended that classroom experiential exercises go a long way to furnishing skills useful to a future real experience. They highlighted that such exercises further the development of key process skills such as: group work and live project work; the handling of methodological issues; the development and use of decision support systems - broadly defined in the manner of, say, Eden (1995) for whom the term indicates their ability to handle problems that have not been pre-formulated and that may have quite diverse structures; and, problem structuring skills. For Williams and Dickson, such skills arise because classroom experiential learning exercises allow for combining analytical abilities with simulated interventionist attempts which require the management of multifarious decisions. Students can thus be introduced to the impact of social dynamics on successful problem resolution (Eden, 1982) in a controlled environment which can prepare them to think and decide more intelligently when they finally confront the socio-political dynamics of real-world decision making. In suggesting classroom experiential exercises, Williams and Dickson referred to David Kolb (1984), one of the most influential of contemporary experiential learning theorists. They indicated that the OR literature had already taken notice of Kolb's 'learning cycle' (Scott, 1990, 2002) and it would appear that Kolb's work can indeed inform pedagogic approaches to decision making.

On the one hand, then, the systems movement is expressing concerns over education in general. On the other, OR is suggesting classroom experiential exercises as a significant pedagogical approach. The question arises: what is there of significance to classroom experiential learning which the systems movement might find useful when addressing improvements in pedagogy? This paper provides a systemic understanding and framework of classroom experiential learning that highlights the significance of the approach. In doing so, it renders the approach relevant for consideration by the systems movement as a potential contributor toward the improvement of education in general.

2 Cases and Pedagogic Approaches

The educational concerns of the systems movement centre upon the inability of the current education systems to train for the reality of the contemporary world. OR's suggestion of classroom experiential learning is aimed toward training students for dealing with this world. A feature of this debate is the desire to minimize the gap between classroom and real world by focusing on what can be done *in the classroom* in order to prepare for the real world. The discussion begins, therefore, with the one tried and tested window to the world which is available in classroom teaching: the case study.

In general, there are two types of cases available for pedagogic use in the classroom: *demonstration* cases and *problem* cases (Böcker, 1987). Demonstration cases, as the term suggests, demonstrate real world practice. In other words, they are illustrative devices of the practical application of concepts, theories and processes. They belong to a teaching approach which oscillates between conceptual focus and practical illustration, an approach known as *deductive* (Böcker, 1987; Corner and Corner, 2003). Though well-established, this approach is not without its critics.

A commonly understood problematique is that the deductive pedagogic approach, with its leanings toward demonstration cases, tends away from providing the student with a personal experience of an application, even if such a possible application remains within the confines of the classroom - which confines are not limited to such an extent as to deny the possibility of offering an experience of value (Kolb, 1976, 1984; Fellers, 1996; Brock and Cameron, 1999; Scott, 2002; Kayes, 2002). Dewey (1938: 19-20) and Kolb (1984: 5) are even more polemical: in fostering a learning *discipline of passive absorption*, the deductive approach is perceptible as one which demands (and all too frequently acquires) a *static classroom context,* in which it *imposes knowledge* through the medium of *static pedagogic materials*, with the aim of *drilling isolated skills and techniques* that can prepare the student for a *possible* experience in some *remote* future.

The approach, in other words, denies the student what Kierkegaard (1992) calls 'subjective appropriation': the opportunity for students to appreciate, through personal experience, the knowledge for themselves (*now*, that is, without having to gamble on the chance that the aforementioned remote future will actually occur). As Kierkegaard (1992: 22) puts it, the denial of subjective appropriation paves the way toward a result which is the very opposite intended by pedagogy itself, for:

> it is assumed that if only the objective truth has been obtained, appropriation is an easy matter; it is automatically included as part of the bargain, and *am Ende* the individual is a matter of indifference. Precisely this is the basis of the scholar's elevated calm and the parroter's comical thoughtlessness.

In system theoretical terms, the deductive approach tends toward trapping students in a closed learning system, whose prefabricated and predefined tendencies in turn prefabricate and predefine students' own abilities to epistemologically engage *with* situations, *with* concepts, and *with* concepts *in* situations. The entropic tendencies of this closed epistemological system give rise to sterile learning whose relevance is minimal to the ever-changing open system known as reality or real world problems.

This critique of the deductive approach, therefore, paints a rather bleak picture for effective teaching. Students, in this approach, remain *passive* recipients and digesters of

information: in the first instance of theory and concepts and, in the second, by way of a demonstration case, of theory and concepts in illustrative context. The deductive approach, in other words, does not *actively* engage students in a problematic context. At best, pedagogic and learning possibilities remain largely within the theoretical side of the didactic spectrum. This being the case, students might well find the concepts interesting on paper. They might even appreciate *in principle* the concepts' practical relevance. Lack of practical and personal *experience* through classroom exercises, however, leaves students hesitant as to themselves potentially attempting to use or apply the concepts in the future. For students-as-would-be-professionals, seeking experts or specialists will be a more attractive, and less risky, option in the future than their actually attempting to apply the concepts based upon largely theoretical learning. As such, the deductive pedagogic approach ultimately seals the fate of an entire field: on the one hand, its application potential rests in the hands of a few specialists/consultants; on the other, the field remains as merely an interesting topic in academia.

Overall, the critique of the deductive approach centers on this approach's inability to provide the student with a *personal experience* of the subject matter at hand. Based on the views of Dewey and Kolb, the critique calls for an approach which facilitates *active absorption* on the part of the student within a *dynamic classroom context* in which knowledge is *discovered* through the medium of *dynamic pedagogic materials* which can *holistically* provide *integrated skills and techniques*. The critique, in other words, seeks an open epistemological system whose structure can allow continual learning in keeping with the ever-changing open system known as reality or real world problems.

It would appear that what is called for is simply to stand the deductive approach on its head. Thus, instead of the aforementioned demonstration cases, *problem* cases become the norm. They do not so much as demonstrate real world practice as offer real world problems to be solved. Such cases are described by Böcker (1987) as 'open ended', placing the burden of analysis and decision making on the student. They allow for the realization of three basic determinants: it is the student who must identify the critical issues in the case, decide what methods are appropriate and use them, and ultimately interpret the results of analysis and suggest a plan of implementation (Cochran, 2000; Bell and Lanzenauer, 2000). The student is introduced to a world which requires his active involvement, and through which activity he is presumed to learn - or even 'infer' (Corner and Corner, 2003) - a number of general problem-solving rules, techniques and/or approaches simultaneously. Instead of absorbing theory, the tendency is for the student to learn from practice. Such a pedagogic approach is referred to as *inductive.* Like the deductive approach, however, it is not without its problems.

Undoubtedly, inductive learning switches the focus from largely theoretical learning to the ever-changing open system known as reality or real world problems. In a quasi-Heideggerian manner (Heidegger, 1962; Introna, 1997), this approach throws Kierkegaard's elevated scholars and the would-be parroters 'into the swamp' - to borrow a term from Rosenhead (1992) – so that they may mess about in the open-system messes which constitute open-system reality (Ackoff, 1979), and thereby avoid getting trapped in some closed epistemological (or learning) system.

Inductive pedagogy, however, does not avoid the entropic trap; for basing student learning on the open-system world does not, of itself, counteract closed-system learning. The driver of knowledge is, of course, replaced: instead of theory, it is now praxis, or

engagement with the world. A replacement part of a system, however, even if such part is deemed to be of higher quality, does not necessarily change the essential dynamics of the system. The tendency is for learning to arise due to external causes and, since such externality is appreciated as an open system, it is presumed that learning itself will avoid a closed system fate. Such an assumption is misguided. For if learning is now a function of external conditions, the tendency is for it to be sourced in, and hence largely determined from, them. Based upon this dependence on the phenomenal world, learning tends to lack any contact with itself: learning is rendered a slave of phenomenal determinism, lacking any epistemological self-referentiality. Such determinism spells the same fate as the closed system deductive approach, only this time it is a fate into entropic exhaustion philosophically known as scepticism (Merleau-Ponty, 1964).

Standing the deductive approach on its head, then, does little to alleviate the problem this approach poses. The *nature* of the problem appears to have changed: where deductive pedagogy inhibits practice, inductive pedagogy inhibits theory; or, equally, whilst the former approach inhibits the ability to deal with particulars, the latter inhibits knowledge from taking advantage of generalities. The *essence* of the problem, however, remains the same: neither approach in itself provides an effective learning system and hence is inadequate for the accumulation, development, and use of knowledge. What is missing? Arguably, there is no missing third epistemological piece, at least not at the foundational level – as Smith and Smith (1995: 32) make clear when introducing Husserl's wide-ranging contributions to epistemology:

> Knowledge about objects […] proceeds, Husserl argues, by comparing corresponding intuitive observations and framing more theoretical judgements about what is known, and in principle going back and revising the initial observations. This is quite a natural account of human knowledge, weaving together strands of both empiricism (knowledge begins with observations) and rationalism (knowledge is guided by reason) in a quasi-Kantian thesis (knowledge centrally involves putting objects under ideal species via conceptual structures of certain sorts).

In other words, the seed for human intellectual and, hence, overall survival and development lies in an *interaction* between deduction and induction. As such, it is the *relation* between the deductive and inductive pedagogic approaches that is the original and primary foundation upon which learning rests. In the field of pedagogy, nowhere is this better expressed than in the work of David Kolb (1984).

3 The Kolbian Experiential Learning Framework

Kolb (1984: 21) favors 'a holistic integrative perspective on learning' which systemically links both instructional approaches. He bases his entire presentation of experiential learning on the aforementioned relation. He identifies *concrete experience* and *abstract conceptualization* as respectively empiricist and rationalist foci of learning. These two learning modes relate to each other, on the one hand, by means of *reflective observation* of the concrete experience resulting in abstract conceptualization and, on the other, by means of *active experimentation* of the abstract conceptualization resulting in concrete experience. In other words, reflective observation of empirically acquired knowledge enables rationalist development of such knowledge. In turn, active

experimentation of ideas enables the acquisition of empirical knowledge. The learner is thus involved in a two-way, mutually informative, and complete learning/epistemological process or *system*. This system is illustrated in Figure 1.

INSERT FIGURE 1 ABOUT HERE

It is easy to trace Kolb's argument in favor of this understanding. He begins by expressing the inseparability between learning and epistemology for the furtherance of pedagogy:

> [T]o understand knowledge, we must understand the psychology of the learning process, and to understand learning, we must understand epistemology – the origins, nature, methods, and limits of knowledge. (p. 37)

Kolb (p. 18) finds support for this thesis in Piaget, in whose research he sees an inquiry into 'the relationship between the structure of knowledge and how it is learned.' Indeed, Kolb (p. 37) goes so far as to extensively cite from Piaget's (1978) *American Psychologist* article, in which 'it is impossible to dissociate psychology from epistemology'. Kolb then chooses to conclude the citation with Piaget's division of epistemology into 'empiricism, apriorism, [and] diverse interactionism.' The third term is equivalent to Kolb's (p. 21) calling for 'a holistic integrative perspective on learning' – a reference reflecting the systemic understanding above.

The deductive pedagogical approach with its theoretical focus, therefore, leans toward apriorism, whilst the inductive pedagogical approach, with its practical focus, leans towards empiricism. For Kolb (1984: 20), neither pedagogic approach proves sufficient in itself for the realization of effective learning, yet no third singular alternative is available. In a distinctly systemic turn, therefore, and in line with the understanding above, Kolb (p. 101) opts for their systemic or 'interactionist' momentary conjoining from which arises experiential learning.

The systemic conjoining of empiricism and rationalism is not new in the history of thought, and especially in the history of epistemology. Kant (1929) is widely regarded as the first great synthesist. In the twentieth century, Husserl reinvigorated this systemic approach (Natanson, 1973: 3-41). A more recent systemic development of epistemology in this vein – and one whose particular aim is to inform system theory - is provided by Georgiou (2001, 2004) and Georgiou and Introna (1999). Kolb's 'interactionist' option may thus be appreciated as philosophically acceptable and practically relevant.

Kolb's work serves to highlight that whatever the critique of the deductive approach, it cannot minimize the value of theoretical learning evident therein. As such, instead of standing the deductive approach on its head, the critique serves to complement it with an inductive approach which, alongside deductive learning, can also provide learning through experience. As such, the critique opens the way for the inductive approach to amplify the deductive approach and create a fusion which gives rise to a virtuous learning circle.

4 A Systemic Framework for Case-Based Classroom Experiential Learning

In essence, then, Kolb presents a learning system constituted by two moments, deductive and inductive pedagogic methodologies. *Qua* moments, these two approaches enable the realization of an emergent property. That emergent property is known as *experiential learning.* More significantly, however, what Kolb shows is that learning depends on the praxis of relating these two moments. That is, without active experimentation or reflective observation, the two pedagogical approaches reduce to detachable pieces, independent of each other. As such the heart of experiential learning lies in reflectively observing concrete experience and actively experimenting with abstract conceptualizations. As noted earlier, therefore, the original foundation for learning lies in the relation between deductive and inductive pedagogy.

In the classroom context, the means for such observing and experimenting is provided through problem cases. Mu and Gnyawali (2000) add that students should be allocated to workgroups in order to prepare them to effectively work in cross-functional teams that have become increasingly popular/necessary in organisational reality. Such workgroups, moreover, will enable them to experience the development of synergistic knowledge and its contribution to effective performance in heterogeneously-constituted groups. They highlight three factors which impact upon the development of synergistic knowledge: cognitive conflict, team psychological safety, and social interaction, arguing that students exposed to these factors are better prepared to handle complex problem-solving. In other words, case-based classroom experiential learning can foster skills explicitly required of employers or, more generally, of the world in which the real problems lie. This requirement is continually evidenced in inquiries into higher education such as the 1997 National Committee of Inquiry into Higher Education in the UK (Peters, 1999).

Problem cases, therefore, offer significant educational advantages. Whereas the inclusion of demonstration cases as illustrative devices for deductive learning is not necessary for such learning *per se,* a problem case remains an integral tool for the furtherance of classroom experiential learning. More specifically, the problem case remains closely integrated to the constituent inductive instruction which contributes, along with the deductive approach, to the emergence of such learning. Indeed, given the contextual limitations of the classroom, the problem case is of crucial importance for it provides the experiential catalyst. In this respect, the problem case is the part without which the instructional system could not give rise to the emergent property *classroom experiential learning*.

If problem cases are to be included in Kolb's experiential learning system for the purposes of furthering classroom experiential learning, they must therefore be included as empirical means for attaining some degree of concrete experience and hence inductive learning. Indeed, inductive learning and problem cases must be intimately related within the wider interrelations of the experiential learning system. One such possible integration is provided in Figure 2.

INSERT FIGURE 2 ABOUT HERE

In this systemic framework, deductive instruction provides an initial platform, for example in the form of a lecture explicating certain concepts, which leads to an initial degree of deductive learning. This initial deductive learning serves to inform the tackling of a problem case. Upon setting to work on the problem case, a certain degree of inductive learning takes place. Indeed, there is natural learning feedback between the problem case and inductive learning, thus constituting a sub-system of the wider instructional/learning system. The learning incurred within this sub- system may, and usually will, serve to inform the initial deductive learning – hence the feedback to deductive learning. Such feedback may not only reinforce the initial deductive learning but serve to question it, leading to further deductive and, consequently, inductive understanding. Further conceptual material is introduced through additional deductive instruction and, with each new set of concepts, inductive learning begins to practically appreciate their interrelations and their systemic use. Consequently, after the initial iteration, the parts of the system begin to act less as distinct stops within a learning route and more as systemic interrelations which inform and question each other in the interests of advancing learning and its applications. As such, experiential learning begins to emerge and is strengthened with each opportunity to learn deductively, inductively and through a problem case, simultaneously. When learning can no longer be distinctly recognized as either deductive or inductive, the students may be said to have internalized it or 'thought it in' (Bell and Margolis, 1978). At this point, knowledge forms part of the learner's conceptual apparatus for not only perceiving, but also for dealing with, reality. Hence, the transition from apprentice to expert begins.

The advantage of this systemic instructional framework is that it promotes a learning balance between general/theoretical principles and experiential influence or, in other words, a didactic-experiential blend (Bell and Margolis, 1978). This combats one of the dangers of experiential learning whereby excessive experiential influence could leave learners without reference points from which to derive meaning and relevance from the experience. Indeed, the framework points toward the realization of some key objectives for experiential learning (Certo, 1976; Kayes, 2002): to facilitate learning via theory *and* experience; to *apply* theory (through an experiential exercise) in such a way which can raise questions about the theory itself and thus serve to clarify or elaborate conceptual (deductive) learning; to enable learner engagement in a dialectical inquiry process; and to provide for a holistic and integrative learning experience.

Promoting this balance is recognized as a demanding objective, requiring time, effort, and a high degree of instructional effectiveness (Shuman and Hornaday, 1975; Certo, 1976). Williams and Dickson (2000) also caution that the exercises might not enable students to immediately appreciate the value of dealing with messy problems. This may be because classroom experiential learning is focused more on process than on regurgitating well-defined content (Kayes, 2002), requiring a new learning paradigm of the students. The process includes the gradual fostering, by the instructor, of new conceptual frameworks which can promote students' skills of inquiry, self-esteem and self-directedness, aimed at enhancing their abilities to use and alter knowledge in innovative ways in order to enable insight rather than remain passive absorbers of instruction (Bell and Margolis, 1978). This runs counter to many management degrees (from Bachelors through to MBA) which trade on substantive factual material and tend to disregard teaching *how to think* in problematic situations (Checkland, 2000; Bennis

and O'Toole, 2005). Behind effective case-based classroom experiential learning, therefore, lies a more profound challenge: to develop curricula which balance necessary factual content with equally necessary mental training and development. Indeed, arguably, the latter provides solid foundations for absorbing the former as required contextual knowledge for dealing with complex problems.

5 Conclusion

The management sciences are justifiably concerned with developments in education, especially with the results of public inquiries which make recommendations on the future of education. A common thread which unites the inquirers, their critics, and academics in general is the concern to minimize the gap between classroom and real world so that students are effectively prepared for the demands of real-life problems. The present paper has focused on what can be done in the classroom in order to prepare students - prior, that is, to even an intermediate real-world experience such as an internship. Case-based classroom experiential learning has been discussed as one fruitful approach. A systemic framework for such learning has been presented, highlighting the advantage of incorporating equally important deductive and inductive instructional methodologies as moments of one systemic pedagogical approach. The significance of the inductive moment has been especially stressed. Simultaneously, however, the discussion has pointed to the demanding efforts required of instructors and students alike. It was hinted that, in general, the realization of effective learning lies in developing balanced curricula which provide opportunities for students to learn how to learn and hence think for themselves. For ultimately, as Kierkegaard has argued, any tendency by scholars toward elevated calm, or by students toward parroting thoughtlessness, begins to render both irrelevant to the storms of the real world which demand progressively improved thinking.

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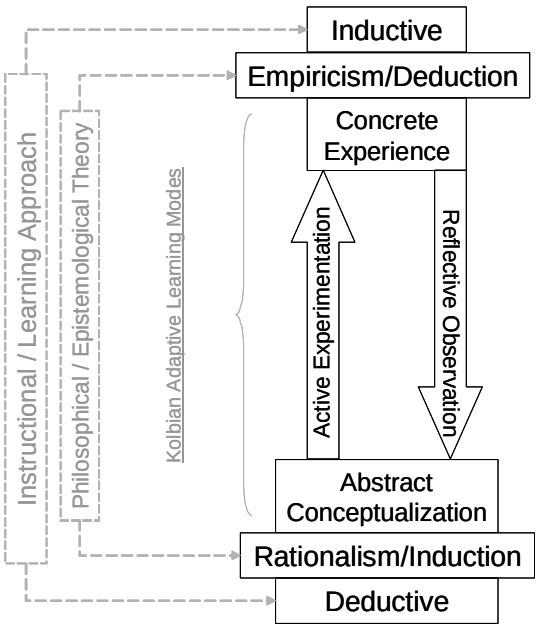
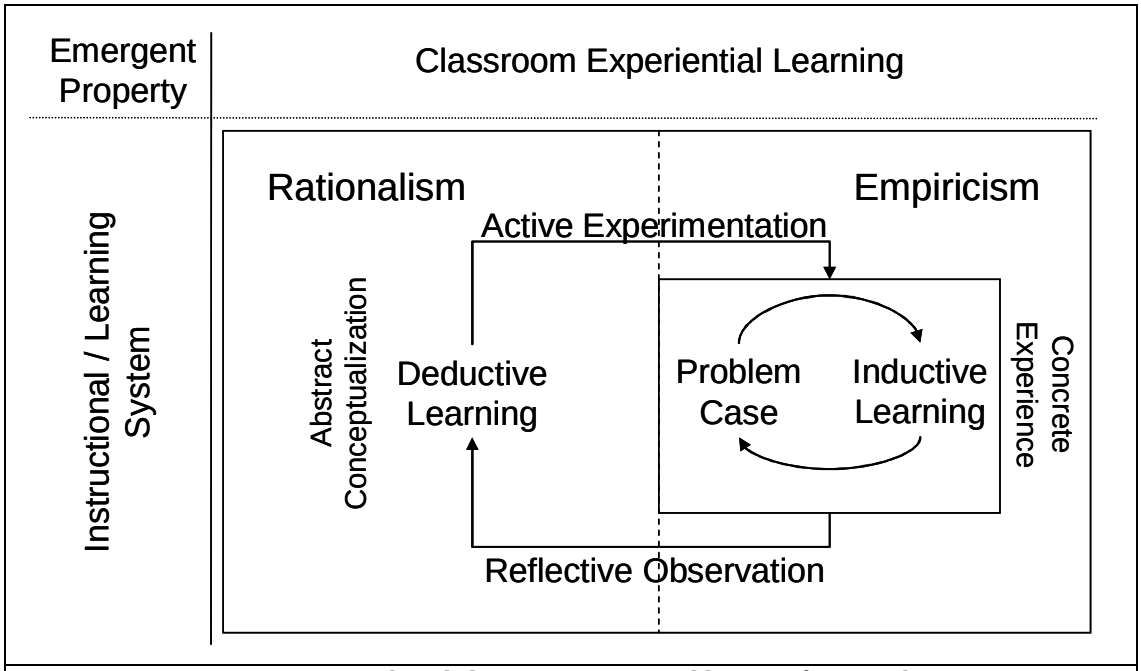


The Kolbian learning system with respective philosophical/epistemological theories and instructional/learning approaches

Figure 1



Systemic, case-based classroom experiential learning framework

Figure 2