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The Application of the Learning Sciences to the Design of Business Education Cases

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Case Studies as a Teaching Tool in Management Education

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Chapter 8

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ABSTRACT

Business education is education for practice and thus, requires a systematic and integrative approach that will guide students toward becoming reflective practitioners. Case-based education is an important tool that can provide the educational experiences that produce effective practitioners but only if its use is guided by a sound theoretical and research based framework. Research and theory from the learning sciences can guide case-based instructional practices. This chapter will provide a framework for the design of case-based instruction that incorporates teaching and learning affordances derived from the theory of situated learning and cognition. If the educational goal is to produce business practitioners with the skills and knowledge necessary to operate successfully in today's global business environment, business education needs to be prepared to incorporate theoretical perspectives derived from learning sciences research into case-based education.

INTRODUCTION

The world and the world of business has changed dramatically in the last quarter century. New technologies, new media, new industries and new professional practices have changed the way professionals in virtually all industries conduct business. But as recent news stories of scandals and blunders in so many spheres of modern society have demonstrated, our educational systems are not helping students develop the professional perspectives needed to cope effectively with the new business environment and are in need of re-evaluation and revision. The professional perspectives students are being taught are too reliant on technology and narrowly focused on analytical views of gain and objectification. To adequately prepare students to enter the technologically sophisticated, media-connected, culturally diverse, 21st

century global workplace business management programs need to help students develop a professional perspective that is more ethical, reflective, integrative, situationally aware and able to create effective, evidence-based solutions to professional problems. Adult and professional graduate programs must help students develop a more sophisticated, civic-minded professional competence that allows them to effectively integrate skilled "know-how" and ethical professional judgement in real-world settings.

The basic premise of this chapter is that professional business practice must deliver a combination of knowledge, cognitive and hands-on skills and professional comportment and therefore has a unique nature that requires a unique pedagogical approach with a sound theoretical foundation. This chapter will provide a framework for developing and delivering case-based education that capitalizes on the type of contextualized learning that is critical for the development of reflective practitioners. As a number of educators (Benner,1984; Noone, 2007; Berragan, 2013) have pointed out education for the professions requires education for practice. Curricula and instruction must be designed to deliver professional education in a contextualized fashion that links knowledge, skills and ethical, reflective practice behavior.

This chapter then, will discuss the need for a conceptual framework that will guide the design of a new case-based teaching model and will provide an overview of a relevant theoretical perspective, situated learning, that is derived from the learning sciences. Situated learning pedagogies, especially when combined with educational technology that extend classroom learning and provide a larger repertoire of learning activities can be used to design a case-based model that will be more effective in the education of reflective practitioners.

BACKGROUND

Over the years there have been a number of studies of management education (Pfeffer &. Fong, 2002; Bennis & O'Toole, 2005; Mintzberg, 2005) resulting in a number of recommendations focused on improving learning outcomes. Datar, Garvin and Cullen (2010) for instance, in a study of MBA programs in Europe and the United States identified unmet needs of management education. Some that are relevant to the discussion in this chapter include:

- Leadership development, improved emotional intelligence, and the ability to motivate, delegate, and lead ethically.
- The need to integrate concepts through a multidisciplinary approach that permits students to solve problems.
- The need to pursue creative and innovative thinking.
- The need to balance practice, theory, and experience.

Studies that identify needed outcomes are helpful but as Avolio (2014) has pointed out we need to go beyond studies that focus on the outcomes of business education and produce more research on the types of teaching methods that can produce these desired learning outcomes. From this perspective business educators should address both the program content and architecture but also develop increasingly effective learning methodologies that enable students to successfully meet the challenges facing managers in the ever-changing global business environment. As in many educational disciplines teaching methods in business education have developed over the years based on pragmatic factors or from imitation and are rarely derived or informed by sound research or grounded in theory. Improving business education has

to be achieved through theory-based learning methods that are appropriate for the type of management education needed for today's and tomorrow's increasingly complex business environment.

Case-based teaching is certainly one example of a teaching methodology touted as an effective method for professional education. Case-based education has been promoted as "a system of experiential learning exposing students to real situations that asks them to relate theory to practice and develops critical thinking" (Aviolo, 2014). Although case-based instruction has been used for decades, there is little in the way of theoretical or empirical guidance to help faculty design cases in a way that meets the new learning outcomes necessary for a changing business environment. Educators who use cases need to become aware of recent educational research that demonstrates how learning and thinking are primarily context-oriented and involve a set of interlocking cognitive, metacognitive and affective abilities and processes. By incorporating this research case-based education can be designed with a stronger theoretical basis that can help produce practitioners who know how to assess and manage using contextualized and integrative thinking and decision making.

A THEORETICAL FOUNDATION FROM THE LEARNING SCIENCES

Much of the traditional research in learning and thinking has been driven by questions of how individual's knowledge structures change with learning. Initially, this perspective was drawn from the ideas of Jean Piaget, the Swiss psychologist who developed much of the seminal work on how individual's knowledge changes with age and interactions with the environment. Mezirow (2009, p. 21) has labeled these approaches as "reconstructive" (others have labeled them "constructivist or constructionist") as they "seek to explain the genesis, development and rules related to language, knowledge, morality and communication."

In the last two decades, many learning scientists have shifted their studies from a focus on the individual's cognitive processes and learning to a broader conception of thinking and learning as social activities. Learning scientists with this sociocultural perspective focus on the social nature of learning and thinking and many make the claim that all learning and thinking is situated in and tied to social contexts. Rather than focusing on the learning processes of individuals, learning scientists with this sociocultural perspective focus on activity systems and communities of practice and investigate leaners' interactions and patterns of participation in the activities of the system. According to this perspective, learning and cognition are thought to be the products of activity occurring in situations or communities of practice and knowledge, learning and thinking are distributed among the members and components of these communities (Greeno & van de Sande, 2007).

Situated learning theory or what some (Greeno, 199l) have called the situative perspective views learning and cognition as distributed over activity systems and communities of practice rather than residing strictly in the head of individuals. The situative perspective looks at learning, cognition, motivation and achievement as social activities (Turner & Nolen, 2015) and applies the sociocultural view to research into classroom learning that examines:

- How learning is constituted in the classroom.
- The role of student identity in learning.
- The nature and consequences of discourse.
- Materials used in the classroom.

Greeno and van de Sonde (2007) have outlined the main issues in situated learning as it applies to education. Their main points include:

- Knowledge and cognition are distributed among individuals who interact within a social system.
- Knowledge and cognition function as a capability for participating in activity systems.
- Learning is a change in participation and positive learning is a change in the direction of more full, active participation.

Collins and his colleagues (1991) have summed up the research in situative learning that looks at the interactions of learning, thinking activity and situations by stating, "Situations might be said to co-produce knowledge through activity. Learning and cognition, it is now possible to argue, are fundamentally situated" (p 32). The idea that learning in context produces knowledge through activity points the way to a new pedagogy for producing reflective practitioners whose knowledge and skills are blended in a complex, network of skilled practice.

The notion that learning and cognition are developed in individuals through interaction with their environment is derived in part from work in the fields of ecological psychology (Gibson, 1979) and anthropological studies of learning in apprentice settings (Lave, 1988; Lave and Wenger, 1990). Gibson developed the field of ecological psychology and took a systems approach to perception that examines what he described as the affordances for action the environment provides and the individual's effectiveness in detecting these affordances and using them to take action. Gibson's theory of affordances and agent effectiveness in perceiving and using affordances provided one line of research in support of the power of context to affect learning and thinking.

Later, Donald Norman (2013) extended the term affordance to include *all* perceivable action possibilities and discussed affordances in terms of features of the environment that suggest action. For instance, a door with a handle will suggest that one push the handle down to open the door. A personal demonstration of the power of this affordance once occurred while trying to exit a house where someone had installed the handle up-side down. The affordance became a constraint because a person trying to exit assumed they should push the handle down, not pull the handle up. As we will see, the concept of affordances and constraints plays an important role in the situative perspective on learning and cognition and will be relevant to the design of effective case development for professional education.

The situative perspective on learning and cognition was also informed by the anthropological study of apprenticeship. Lave (1984) and later Lave and Wegner (1991) studied traditional apprenticeship learning and training in authentic settings and established a set of principles for learning in authentic contexts that laid the theoretical groundwork for studying cognition in practice or what has been called situated cognition. According to Lave and Wenger, the apprentice learns and carries out tasks in a real-world context e.g. a tailor shop, where experts and novices of varying abilities are working together. This creates a learning culture where beginners have access to expert performance and guidance and engage in learning in context that shapes the apprentice's growing perception of what constitutes good practice. Rather than learning skills in isolation as is done with much of school learning, learning in a real-world setting provides more signals and reminders about how to apply the skills that have been learned.

The Apprentice Model of Learning in Context

Apprentices start out working on small pieces of the final product with assistance from the experts and advance to more difficult tasks and products that successively approximate the final product. Because they learn in context, apprentices have access to experts who provide both modeling and coaching and offer examples of both finished products and work-in-progress. Through observation of the experts' successful techniques (and also the errors of other apprentices) apprentices can create internal models of the final product, which they can use to guide their developing skills. A basic tenet of Lave and Wenger's theory of situated cognition is that the interaction of observation, coaching and scaffolding provided by the expert and the increasingly skilled performance of the apprentice allows the apprentice to shape a productive mental model that can guide their work.

Cognitive Apprenticeship

Cognitive researchers such as Alan Collins and John Seely Brown (Collins, Brown & Newman, 1987) extended Lave and Wegner's characterizations of apprenticeship and situated cognition and applied them to attempts to improve teaching by focusing on cognitive skills in school subjects such as math, reading and writing. The offshoot of Collins, et al work was the establishment of a set of principles for what they called "cognitive apprenticeship" or the application of apprentice learning to the teaching of cognitive skills in applied settings.

The term cognitive apprenticeship was used to stress two issues. First, as with traditional apprenticeships, teaching methods attempt to express explicitly expert's mental processes and strategies used in solving problems in a domain such as math or reading and domain knowledge is always taught in service of carrying out actual tasks rather than as isolated, decontextualized knowledge. Second, although cognitive apprenticeship teaching uses the same modeling, coaching and scaffolding techniques as traditional apprenticeships, the focus is on cognitive and metacognitive skill development (Collins, Brown & Newman, 1987)

The Three Professional Apprenticeships

The idea of applying apprenticeship principles to education was picked up by the Carnegie Foundation (2007) in their studies that identified the important components of professional education. Because of the need to teach both knowledge *and* skills in professions such as law, health sciences and engineering their analysis established a need for educational techniques that help students integrate not only knowledge and skill but also another aspect of professionalism that some equate to ethical practice, identity or thinking like a professional. The Carnegie studies produced a series of reports that, in part at least sought to identity what they called the signature pedagogies in each profession and also to identify common educational issues across the profession. Out of this work came the notion of teaching to three high-level sets of skills and knowledge they called apprenticeships. The Carnegie studies identified three dimensions, which they labeled high-end apprenticeships for professional education:

- A knowledge apprenticeship that includes teaching the academic knowledge base and habits of mind important to the profession.

- A skill-based apprenticeship that relates to practice, and includes professional practice judgment.
- An ethical practice apprenticeship that addresses teaching and learning of ethical standards, ethical comportment, social roles, and responsibilities of the profession.

How Does Case-Based Learning Fit Into A Situated Learning Perspective?

Lee Shulman (1992) made an extensive analysis of cases in service of defining a pedagogy for case-based learning. Besides being useful for teaching principles and concepts Shulman also suggested that strategies, dispositions and habits of mind were also potential outcomes of instruction using cases.

In regard to the strategies, dispositions and habits of mind that are the focus of teaching with the three high-end cognitive apprenticeships, cases can be said to help teach students, using Shulman's phrase "think like a " CEO, CFO, accountant or an HR manager in relation to the range of activities that make up professional practice." Basing instruction on this perspective would require a shift from teaching for traditional learning outcomes that focus on concepts and rule-based modes of thinking to one that addresses the elements of the three high-end apprenticeships and focuses on metacognitive strategies and habits of mind. Applying this perspective to case-based education requires that cases be designed to present a simulated professional context and learning situations that guide students into thinking like a member of the profession.

Case-based education typically involves reading of the case material and perhaps notes or summaries as well as class discussions. Although the content and design of the case are important, many people believe that the accompanying discussion is vital to helping students develop critical thinking skills. In earlier work on the role of discussion in case-based learning Schwab (1964) suggested the need for two different levels of discussion that accompany a case analysis. The first level of discussion focuses on the case content where the group generates a number of different alternative perspectives on the case material. The second level of discussion requires the students to be more reflective, using the dialogue and analysis generated in layer one as a second body of material beyond the text itself. This multi-level discourse requires students to cycle between lower level and more sophisticated analysis and reflection on the material and their own thinking about the case and others' perspectives. According to Shulman, the narrative nature of cases may help teachers do what is called transformative teaching that helps students translate abstract, propositional knowledge into more concrete skilled know-how that corresponds to practice.

Bruner's (1990) analysis of thinking also provides relevant perspective to the situated nature of case-based learning. Bruner divided thinking into two modes he labeled paradigmatic and narrative. Paradigmatic thinking about facts, concepts and principles is general, abstract and is the type typically addressed in school learning when students are asked to memorize or analyze general knowledge. Narrative thinking by contrast is more specific, contextualized and more personal. In memory and knowledge representation research paradigmatic thinking might relate to semantic memory while narrative is more akin to episodic memory. Shulman makes the case that the narrative nature of cases make them instances of situated cognition as it is defined by Collins and his colleagues and also can be seen as a form of apprentice learning as defined by Lave and her colleagues.

According to Shulman, a case-based pedagogy may capitalize on the strength of situated cognition because:

- The character of case's narrative form may be particularly well suited to a situated learning process.
- Learners may find it far easier to remember and use ideas that are located in the narrative form of cases.
- Cases may reduce the problems of transfer of learning because they simulate the way in which the most effective forms of learning are situated in specific settings and circumstances.

To Shulman then, cases are powerful teaching tools because their narrative format creates a contextual learning that matches the situated cognitive processes revealed by research in the learning sciences. As well, the discussions that accompany cases can create opportunities to help students develop reflective thinking skills, another teaching method supported by learning sciences.

SITUATIVE LEARNING THEORY IN CASE-BASED EDUCATION

Using the situative approach to case-based education we would want to take into account how students coordinate interactions with each other, the learning resources and the elements of the learning environment. Using the concept of environmental affordances we can analyze the elements in our learning environment to try to determine which elements afford positive student progress and which constrain this progress.

It is important to understand that learning in the situative perspective is considered to be a positive improvement in participation in the activities of the learning community, which in turn contributes to the development of the student's identity as a member of the learning community (Anderson, Greeno, Reder, & Simon, 2000). From the situative learning perspective then, teaching is a matter of guiding students to understand the nature of affordances in their specific learning communities and helping them develop the abilities to make use of them as well as the right intentions to motivate their use. Learning becomes a matter of developing abilities to both recognize and use affordances in the learning environment. As students become more adept at recognizing and using relevant learning affordances they participate more in learning activities and in the case of management education begin to develop a professional identity which, from the situative perspective is defined as, "One's participation in and across activities and the sense one makes of oneself in relation to these activities" (Hand & Gresalfi, 2015).

To address the relevant pedagogical concepts from situative learning in case-based education one needs to design cases that incorporate notions of the social nature of thinking and learning, important aspects of discourse and guidance for the development of an appropriate professional identity. The situative perspective can inform case-based education by providing guidance on how to address relevant learning affordances and the abilities and intentions to find and use them. A number of researchers (Greeno, 1992; Greeno & van de Sande, 2007; Gresalfi & Cobb, 2011) have described aspects of situative learning derived from research in the learning sciences that are relevant to case-based education. Three that are particularly relevant include: the social nature of cognition and learning; affordances and constraints in discourse; and an activity-based concept of identity development.

The Social Nature Of Cognition And Learning

Based on principles of situative learning derived from studies of apprenticeship learning case-based education can employ social learning techniques such as modeling, coaching and scaffolding that make implicit the cognitive and metacognitive aspects of expert performance.

Aspects of Discourse

Faculty can help students develop the appropriate intentions and abilities to identify important learning affordances in discussions (Greeno & van de Sande, 2007) including:

- Informational affordances and constraints such as shared schemata and rules for concept development.
- Affordances and constraints that guide discussion such as levels of evidence that are expected or required for mutual understanding and for considerations that are relevant in negotiating the contents of contributions.
- Individual positioning and the effect of constraints and affordances that are available or withheld based on one's position in a community of learning.

Identity

Hand and Gresalfi (2015) have defined identity from a situative perspective in terms of activities and the "sense one makes of oneself in relation to these activities" and derived a number of characteristics of identity derived from the situative perspective. These include beliefs that:

- Identities or relationships that students develop in relation to a particular activity are directly related to and mediated by the features and affordances of the activity.
- Identities can be affected by expectations as to their entitlements and expectations about participation in interaction.
- Positioning in the community of learning corresponds to regularities in the ways that students are expected and entitled to participate in interaction (Gresalfi & Cobb, 2011; Holland et al., 1998).

The Social Nature Of Learning And Cognition: Teaching Cognitive Skills

One direct outcome of the situative perspective on learning is that cognitive and metacognitive skills need to be addressed directly in teaching. Collins, Brown, and Holum (1991) using the principles of apprenticeship derived from Lave and Wenger, outlined a cognitive apprenticeship instructional methodology based on the sociocultural perspective of learning and comprised of the techniques of: modeling; coaching; scaffolding; articulation; reflection and exploration. In their methodology, modeling, coaching and scaffolding are social learning methods that are used to help students develop the cognitive and metacognitive skills that are the target of cognitive apprenticeship.

Modeling is the technique of learning from observing expert performance, coaching is where the expert provides feedback to guide the development of expert performance and scaffolding is the technique of providing support for performance at first but then fading that support until which time the learner can successfully perform the task without support.

The next two methods derived from social learning principles are articulation, where the instructor aims to encourage the students to express their knowledge or strategies and reflection, which is a comparison of the student's critical processes and those of the expert or other participants. Exploration, the last technique in cognitive apprentice instruction is an attempt to move the student to independently execute expert problem solving and to seek out and define new problems that can be solved with the newly acquired skills and strategies.

Teaching to the High-End Apprenticeships

Although there are certainly notable exceptions, the trend in many management programs is to teach a professional perspective that is a rational and scientific approach to practice driven by an emphasis on technological and analytical ways of thinking. But there is an objectifying nature to this approach and it can produce a linear and decontextualized problem-solving style often at odds with the need to practice situational awareness and consider the unique elements of a professional problem and the web of needs and relationships of other participants (Foster, et al 2006; Benner, Sutphen, Leonard & Day, 2010). To produce professionals with these integrative skills the Carnegie studies advocated professional schools teach to the three high-end apprenticeships that include:

- A knowledge apprenticeship that includes teaching the academic knowledge base and habits of mind important to the profession.
- A skill-based apprenticeship that relates to practice and includes professional practice judgment often called "skilled know-how".
- An ethical practice apprenticeship that addresses teaching and learning of ethical standards, ethical comportment, social roles, and responsibilities of the profession. This apprenticeship relates to the need to help students to practice reflectively in a way that integrates the knowledge, skilled-know-how and profession's traditions and standards of practice (Benner & Sutphen, 2007).

The design of case-based education should incorporate explicit teaching of cognitive skills, professional practice judgement and professional comportment by taking an integrated teaching approach rather than one that delivers the teaching of these skills and knowledge in separate teaching settings. As Benner and others (Noone, 2009) have pointed out, teaching to the three high-end apprenticeships requires a situated approach to teaching that integrates the cognitive, skilled know-how and ethical comportment apprenticeships. Although we must still attempt to produce specific competencies in our business students, an integrated teaching approach aims to serve the three apprenticeships in a manner that capitalizes on the learning affordances of situated learning contexts.

According to Benner and Sutphen (2007) teaching to the high-end apprenticeships addresses the knowledge and skills that produce practitioners whose practices are:

- Integrative which requires the ability to combine knowledge, skill, and ethical comportment.
- Reflective which requires the ability to examine and assess one's own performance.
- Context-dependent and is a relationship between professional ability, the task or problem and the professional environment.
- Use reasoning in transition as elements of the environment change during problem-solving.

Education for the professions then, requires a unique perspective and approach. Benner and her colleagues (2007, 2010), for instance, have called for professional education that focuses on the following:

- **Contextualization:** Teaching knowledge and skills separately or in a decontextualized manner produces fragmented educational experiences. Students should be taught in an environment where knowledge and thinking are situated and action applied in a particular context. Faculty members must provide linkages between the professional knowledge and the use of that knowledge in the practice setting.
- **Authentic Learning Experiences:** Typical classroom teaching situations involve impoverished settings that do not approximate the dynamic business environment and many assessments focus in on fine-grained or elementary competencies. Students need instruction and assessment using instructional materials that approximate real-world settings encompassing a diverse set of business-related situations.
- **Multiple Ways to Think:** A singular focus on teaching scientific and critical thinking skills often results in a cynicism and a habitual critique of methods being taught. Scientific and critical thinking need to be augmented with other ways of thinking such as the ability to reason through the trajectory of a developing business situation and that integrate situational needs and the student's own life experience.
- **Formation of Professional Identity:** Professional practice educators should transition from a focus on socialization and role-taking to an emphasis on the formation of a professional identity which supports reflective practice.

In terms of specifics, one can address the high-end apprenticeships by directly teaching knowledge and skills such as the following:

- **Professional Knowledge**
  ◦ Ability to acquire and use knowledge that allows for thinking in ways typical of and important to the profession e.g., learning how to think like a CEO, manager, consultant or other professional practitioner.
  ◦ Habits of mind that allow for integration of skilled "know-how" and professional judgment--habits that define a scholar-practitioner, that is someone who can translate research to practice.
  ◦ "Reasoning in transition" versus snapshot reasoning. Reasoning across time taking into account changes in the situation and changes in the practitioner's understanding of the situation.
  ◦ Reflective, self-improving practice to keep current with changes in ideas, knowledge and practices.

- **Professional Practice Skills**
  - ◦ General and discipline- specific skills of professional practice.
  - ◦ Information and media literacy. Professional communication skills including writing style and quantitative skills.
  - ◦ Emotional intelligence and interpersonal competencies.
- **Professional Conduct**
  - ◦ Professional attitude and awareness of the social roles and responsibilities of the profession.
  - ◦ Moral and ethical thinking.
  - ◦ Cultural competence.
  - ◦ Professional socialization and identity.

The Role of Discussion in Situated Learning

Discussion is a critical aspect of case-based education and the learning sciences have identified a number of important aspects of discussion that can inform the use of discourse in case design. Schwab's recommendation for two levels of discussion in case-based teaching provides an important consideration in the design of situative learning discussion activities. Schwab's proposal that students engage in one level of discussion focused on case content and a second, higher-level of discourse requiring reflection on the student's and the other participants' analysis of the case content establishes the need for a different design for discussions and study groups. A standard approach to case-based learning is to present the case, give students time to study the case and then hold a discussion based on the student's analysis of the facts in the case. Although this provides some discussion-based affordances for learning, it does not necessarily provide for the higher level of discussion suggested by Schwab. To provide students with more affordances that can lead to reflection, self-reflection and transformational learning opportunities many programs require students to participate in study groups between their individual reading of the case and the full class discussion session. This added activity provides more opportunity for students to produce Schwab's second level of reflective discourse which is critical for helping students develop more productive frames of reference, an important element in professional identity.

If the production of reflective practitioners is an important goal of professional education then it is important to turn to theories and pedagogies that address the development of reflectivity in practice. Transformative learning theory developed by John Mezirow (1992,1995, 2003), focuses on the development of reflective thinking by emphasizing changing and adapting frames of reference through critical discourse and critical reflection on content and personal opinion. Explorations of transformative learning theory have focused primarily on the mechanisms posited by Mezirow to lead to changes in frames of reference or meaning schemes. Transformative learning events as described by Mezirow (1992, 1995, 2003) are those that cause the student to undergo "a deep, structural shift in basic premises of thought, feelings, and actions." It can be seen then that as in the cognitive approach to learning and cognition, cognitive structures, e.g. meaning schemes play a role. But transformative learning theory also focuses on the role of discourse and interaction with others and considers the linkages between cognition, emotion and behavior and so shares the situated learning perspective.

Transformative learning theory is specific to adult learners and focuses on learning mechanisms involved in creating new perspectives. Transformative learning requires an ability to reflect on interactions with others in critical discourse as well as the ability to self-reflect. The goal of transformative

learning is to produce more adaptive and efficient frames of reference that allow for engagement in reflective thinking. The unique focus on both mental and educational processes that enhance the ability to reflect and engage in productive discourse make transformative learning theory particularly relevant to the discussion and study group elements in case-based education.

The Critical Elements of Transformative Learning

Fetherston and Kelly (2007) provide some guidance on the teaching of transformative education and outlined four assumptions regarding transformative learning:

- Transformative learning involves profound shifts in our understanding of knowledge, the world, and ourselves.
- Reflection is key to the achievement of transformation.
- Transformation is a process precipitated by experience(s) or information that disrupt current understanding.
- Teaching for transformation involves creating spaces for critical engagement and dialogue.

According to Snyder (2012) transformative learning requires three components: critical reflection, critical self-reflection and critical discourse. Faulk and Morris (2012, p.17) provided some guidance as what elements these core transformative learning features address:

- **Critical Reflection:** The process an individual uses to learn. Critical reflection involves pondering new concepts.
- **Critical Self-Reflection:** The process of questioning personal values, beliefs and assumptions.
- **Critical Dialogue:** The process whereby an individual considers new concepts, how these concepts fit within the personal point of view, and what revisions to personal assumptions, beliefs, or values may be indicated compared to other points of view.

Structurally then, one needs to address the three transformative discourse components when designing case-based learning environments. The case itself can be designed to address both critical reflection and critical self-reflection. Study groups can be directed to address certain aspects of the case to encourage reflection and self-reflection. Critical dialogues are necessary to insure students see other points of view and compare their own.

Cases and the discussions that accompany them contain affordances for the development of professional perspective and identity so case designers should be sure to help students recognize important affordances in discussion activities (Green & van de Sande, 2007) such as:

- Shared schemata (knowledge representations common to a topic or learning community).
- Issues related to discussion protocols that govern initiation of contributions.
- Questioning of others or levels of evidence required for mutual understanding or to accept or reject conclusions.
- Issues of individual roles and status in discussions.

Case designers need to be especially vigilant about issues of individual's position in classrooms and class discussions and help students to understand that there is often a hierarchy of standing in discourse that determines rights, obligations and expectations about making contributions. Students need to be made aware of these situational discourse dynamics that exist in communities of learning and practice and how they are can best deal with the constraints and affordances related to them. With increased awareness of the affordances and constraints of discussions, students can increase their activity and hence, according to situative learning theory, increase their learning.

Identity

Affordances and constraints related to a student's position in a class or class discussion relate to issues of identity development. If, as Hand and Gresalfi (2015) state, identity is a joint accomplishment of the student and the learning context and is related to "one's participation in and across activities and the sense one makes of oneself in relation to these activities," then the elements and affordances of the learning activities the student engages in will be critical to the identities or relationships that students develop. It is therefore important for the case designer to assist students in developing skills that help them increase their attunement to the relevant affordances and constraints that will help increase their participation in learning activities. According to situated learning theory, increases in the ability to participate will produce better discernment of relevant affordances and will contribute to an ever improving sense of one's ability to participate in the activities of the learning community.

Situated Learning Pedagogies for Professional Identity Development

The development of a professional identity can be addressed directly in situative learning environments. Specific pedagogies for professional development can be incorporated into case-based education and include the following teaching methodologies.

Pedagogies of Interpretation

A more civic form of professionalism calls for a more contextualized interpretation informed by the ability to filter science and theory through personal experiences and consider the unique nature of the elements that make up the current situation under examination (Benner & Sutphen, 2007). Students being educated for professional practice must develop a certain level of critical interpretation to be able to analyze situations and the methods they use. This type of interpretation is not bad in itself but it can cause the student to become overly critical or analytical of what is being taught and may leave the practitioner with restricted forms of action. Instead practitioners need to be prepared to reflect critically on their profession's best-practices, theories and techniques but still maintain a solid foundation that allows them to act and practice in a self-reflective way that is situated on the current situation.

Foster, et al (2006) have called this type of practice passionate engagement which refers to a type of professional practice that includes the practitioner's ability to situate their learning and practices within their own experience and world view, a contextual awareness of the critical elements of the situation and the knowledge of best practices in their profession. The pedagogy of interpretation requires experiential learning and integrative learning experiences that combine knowledge of theories and techniques so that students will have a repertoire of experiences to bring to bear on the professional situations they face.

Pedagogies of Contextualization

Standard scientific approaches to practice taught in professional education are general and not necessarily linked to any specific situation. But research in the learning sciences points out that knowledge and cognition are situated and therefore practice must be adapted to the given context. Problem solving in practice is practical reasoning and requires that the practitioner select the elements of professional knowledge most relevant to the given context. Again there is an interactive element to reasoning in context and it requires a more self-reflective, personal demeanor then if one were viewing the situation from a decontextualized, scientific perspective that tends to objectify situations and participants.

According to Brookfield and Hess (2008) the pedagogies of contextualization help students to:

- Develop a consciousness of the context,
- Participate constructively in their encounters with contexts, and
- Engage in social and systemic change.

Pedagogies of Formation

Faculty in professional education are used to communicating beliefs, values and attitudes held by the profession as part of helping to socialize students into a profession. These are components of professional identity but they are separate from another important aspect of professional identity which has been called habitus or habits of practice and are said to guide practice on a less conscious level then beliefs, values and attitudes (Bourdieu, 1990). The developing habitus comes to define the practitioner's habits of practice and although they do not operate at a conscious level they guide the practitioner's professional activities. The skills and actions guided by the unconscious habitus actually shapes and frames the practitioner's professional perceptions and approaches to practice. Taken together with attitudes, values and beliefs, the skilled practice of habitus can actually enhance the professional's perception of events in practice and provide a constantly improving frame of reference.

Unlike the traditional methods of socialization which might be communicated didactically habitus develops through activity and as the skills of the profession are learned they create a keener professional focus and enhance abilities to make finer and finer distinctions. Therefore habitus or habits of practice are an interactive process whereby a new identify is formed so that students begin to act like members of the profession rather than just acting the part. Note that there is a social aspect to the development of habitus because this development requires activity and activity in most professions requires interaction with other practitioners and other people. Formation as a case-based pedagogy can be built into instruction by providing students with opportunities to reflect on practices during case work so that we produce practitioners who continually refine his or her abilities of discernment.

Pedagogies of Performance

A strictly scientific or analytic professional perspective may lead students to believe they can practice unconnected to others in the professional situation if they are just dutifully analytical enough. Professional action is situated but in the sense that the professional must interact with others in the course of the performance of his or her duties. Performance is where a professional integrates what has been gained from pedagogies of interpretation, formation and contextualization. Performance is embodied theory in practice.

Technology Assisted Situated Learning Environments

Trying to create a case-based learning environment that addresses sociocultural learning methods, affordances and constraints of discourse and the development of professional identity can be difficult using only traditional methods. The instructional methodology described by Collins, et al (1991, 2000) calls for a situated learning environment that provides for cognitive apprenticeship and supports integrative teaching of the three high-end apprenticeships as defined in the Carnegie Foundation studies. Helping students develop appropriate intentions and abilities to capitalize on learning community affordances can be limited when students must wait for the next scheduled class, study group session or discussion. Traditional learning environments may for instance, limit the amount and timing of feedback from instructors and other students.

To provide for more learning options instructors can turn to educational technology to create a situative learning environment that provides the integrative professional education required in professional business education. This approach requires the design of an online situative learning environment with a pedagogy and instructional technology that addresses situative learning processes and links them to the learning that is taking place in the classroom. The blended system (Terry & Faulk, 2012):

- Allows continuous learning through the use of educational and communications technology rather than waiting for the next class in order to contact the professor.
- Permits students to enter the forums at any time, at their convenience.
- Is flexible and asynchronous.
- Allows students to participate in learning communities.
- Permits students to get feedback from both the teacher and the other students.
- Student submissions are online so the evaluation process is continuous.

Thus far, the main elements of a situated learning environment have been identified and rationales have been offered as to their importance. To assist business educators who would like to implement these elements in a technology assisted situated-learning environment, a design model will be introduced which was developed originally to guide general educational technology planning and implementation (Hamlin, Griffy-Brown and Goodrich 2003), but was adapted later (Hamlin, 2015) to aid in the planning and implementation of technology assisted situated learning environments. The elements that need to be accounted for in the design of case-based cognitive apprenticeship include:

- The social nature of cognition and learning and pedagogies based on the sociocultural perspective.
- Aspects of discourse including: informational, discussion and positioning affordances and constraints.
- Professional identity development and the effect of expectations, entitlements and status issues related to participation in interaction.

Typical case-based teaching approaches include the case (and perhaps a study guide) for presenting the facts of the case and a discussion that attempts to involve students in an analysis and discussion of assumptions and outcomes for the case. Thinking back to the outline of important elements for cognitive apprentice education by Collins and his colleagues we remember that the main techniques include: modeling; coaching; scaffolding; articulation; reflection and exploration. Cases, study guides and discussions

can address a subset of these elements perhaps modeling, articulation, and reflection. It is possible to design cases that include modeling by either having characters demonstrate desired behaviors or having faculty model in discussions sessions. Students may also derive modeling from other students in discussions. Coaching can also be done in discussion sessions if the faculty wishes to incorporate it but most of the time discussions are intended to allow students to articulate their ideas.

Integrated technology-based models such as the Robust Learning Model by Neumann & Neumann (2010) and the classroom technology implementation model (Hamlin, Griffy-Brown & Goodrich, 2003; Hamlin, 2015) have defined critical factors needed for developing and delivering instructional technology with the aim of creating a high-level learning environment. Education in the professions that capitalizes on situated learning principles requires teaching methods that integrate technology, cognitive apprenticeships and supports transformative learning methods with the goal of creating reflective practitioners. The combination of sociocultural methods, situated learning theory and instructional technology extends the pedagogy of cognitive apprenticeship in classroom learning to the online environment. The next section will present a framework that business educators can use to guide the integration of instructional technology in a manner that provides instructional affordances for situative learning.

PROVIDING SITUATIVE LEARNING AFFORDANCES WITH INSTRUCTIONAL TECHNOLOGY

To provide learning affordances required in situative learning the instructional technology system should be capable of integrating authentic learning activities that support collaboration, discourse and reflective thinking by students. The following list describes online learning functions that provide theses situative learning affordances.

Collaboration/Discourse

Wikis

Wikis are web applications that allow groups to add, delete and edit content on a web page in collaborative development efforts. The most famous wiki is Wikipedia, which is considered the bane of their existence by many faculty members but at the same time considered a treasure by students worldwide. Wikis have been used in a multitude of ways and lately schools at several levels have been experimenting with assignments that require student groups to work together in creating a wiki on some topic. Obviously, the collaborational aspect of wikis addresses social learning elements in situated learning as well as elements of transformative learning.

Online Discussion

Online discussions are probably familiar to most faculty members who have access to one of the main learning management systems such as *Blackboard* or *Canvas*. They have been standard features of online learning since the early days of online learning. Current learning management systems usually provide capabilities for creating topic-based asynchronous discussions around a single topic often with the ability to create "threads" composed of sub-discussions made of responses to a particular question or to

another student's response. Online discussions can serve as a major affordance for both critical discourse as well as critical reflection. The problem with most discussions is that students can take the discussion off in multiple directions not intended by the faculty member. To serve as an affordance for teaching for transformative learning, discussions need to be designed and monitored so they provide elements of modeling, coaching, articulation and reflection as defined by Collins, et al (1991).

Cases and Problem-Based Activities

Cases and problem-based learning activities are similar in that they can be constructed to support instrumental learning and exploration. Problem-based activities are based on cooperative learning which can supply learning affordances when combined with cases. Both cases and problem-based learning activities can be enhanced by modern learning management systems that support the development of multimedia teaching materials. The learning management system needs to support the creation of lessons and activities that merge content of various formats such as text, pictures and video. The creation of such materials in case-based learning support the kind of teaching that integrates teaching to the three high-level apprenticeships (knowledge, skilled know-how, ethical comportment) that is critical for producing reflective practitioners.

Blogs

Blogs are a form of online journaling and have been used to support a variety of learning activities. Blogs can be used in a way similar to portfolios by having student's record thoughts and reflections on particular topics or by asking them to create an ongoing commentary or reactions to questions related to the content or skills they are learning. They are clearly tools for both critical reflection needed in discourse as well as in critical self-reflection and can be especially powerful tools for following-up on either in-class or online activities to provide the opportunity for reflection that is required for situative learning. Blogs are typically filled out on a daily or other regular basis and are typically available to others to read although this is not always the case. Access can be restricted to select groups such as classmates.

Group Activities

Jigsaw Activities

Jigsaw activities require students to break a problem into pieces and work on different elements of the problem in groups and then come together to create a unified product. Designed by the social psychologist Eliot Aronson to create unity in schools that had been recently integrated, jigsaw activities involve breaking problems into parts, assigning the parts to different groups and having individuals learn about their topic. Students present the results of their research and there is a critical discourse to integrate ideas and resolve differences in a final report. Groups present their final report to the other groups and this allows students to compare and contrast and draws on social learning principles of modeling and observation that assist students in learning from student's perspectives and problem-solving processes.

Affordances for Individual Learning

Some instructional technology affordances better address individual learning and involves knowledge and skill development.

Video

Video can be an important tool for feedback on skills but can also present modeling and coaching for reflection and self-reflection Video can be used to record student performances in presentation settings or it can present examples of critical skills or expert performance to provide students with additional modeling and scaffolding experiences. Libraries of video examples of expert practitioner performance, mini-tutorials or just plain samples of "war stories"- practitioners sharing stories of their experience to give students more exposure to expert practice. A well-designed library of videos can be used to address a number of elements of situated learning including:

- **Modeling:** Examples of experts in action can serve to provide students with examples of excellent practice as well as aid in the development of internal models of practice that students can use to gauge their own performance.
- **Coaching:** Although pre-recorded videos cannot address students' specific performance issues, they can still provide coaching in the form of general tips that highlight and clarify aspects novice performance that are generally problematical as well as critical elements of expert performance and problem-solving.

Simulation

Simulations provides affordances for practice of skills and application of conceptual knowledge. Creating the situative learning environment requires that activities and learning experiences be linked with follow-up exercises such as online discussions that provide opportunities for critical discourse and also for critical reflection with technology affordances such as electronic blog or portfolio assignments. Simulations can provide a foundation for a number of follow-up online activities that provide opportunities for situative learning. The information technology system has to provide a seamless integration with the learning experience to make all this effective.

Portfolios

Portfolios can serve students either as a growing repository of their work and progress but also as a forum for reflection. Portfolio exercises can guide students in reflective activities about their own and other's performance and practices and can be linked with learning experiences and online activities. Unlike blogs, portfolios tend to be closed although it is obviously helpful to provide access to relevant faculty members.

Technology Affordances That Support Situated Learning

Adapting cases to address situated learning principles requires a design model that integrates the cognitive, skill and comportment components of apprenticeship learning and specifies the discourse and

identity development affordances that will be addressed in the situated learning environment. Creating a case-based lesson structure that addresses situated learning principles calls for specification of the following components:

Case Modules
- ◦ Generic sections of the case including the case study and case notes, study groups, classroom and technology supported discussion. These are listed mainly to show where the other elements fit into the case structure.

Apprenticeships/Learning Outcomes Goals
- ◦ The three high-end apprenticeships that will guide learning goal specification and the specific learning outcomes related to each of the three high-end apprenticeships.

Social Learning Methods
- ◦ Specific activities designed to provide support for cognitive instruction.

Affordances Addressed
- ◦ Specific discourse and identity affordances addressed.
- ◦ Pedagogies of interpretation, contextualization, formation and performance.

Noone (2009) has shown how a lesson or module can be designed to integrate the three high-end apprenticeships. Building on Noone's approach but revising it substantially, Table 1 shows a generic planning structure for a case-based situated learning environment.

The structure is a map of the learning outcomes and activities that will address the three high-level apprenticeships in an integrated fashion. The learning in the three apprenticeships still has to be operationalized with traditional learning outcomes but the goal of providing instruction that integrates the three apprenticeships is more likely if we relate the learning outcomes to them.

Once the learning outcomes and activities are defined the designer also needs to specify which technology activities will be used e.g., online discussions, wikis, video, to address aspects of situated learning elements relevant to instruction including which social learning methods e.g., modeling, coaching, scaffolding, will be used in the various case modules to address the learning outcomes. Finally, specific learning affordances and pedagogies related to discussions and identity development should be listed. The pedagogies refer to those of interpretation, contextualization, formation and performance mentioned that are critical to the development of successful professional habits of mind and professional identity.

Table 1. Generic design model for incorporating situated learning techniques

Case Modules	Apprenticeships and Learning Outcomes	Social Learning Methods	Identity Affordances

Case study and case notes	Knowledge Apprenticeship
	  Learning Outcome
	    Student will demonstrate knowledge of…
		Modeling	

Student Study Group		Scaffolding Reflection	Discourse Affordances

Discussion	Professional Know-How Apprenticeship
	  Learning Outcome
	    Student will demonstrate skill in…
		Coaching Articulation	Identity Affordances

Class activity	Ethical Comportment Apprenticeship
	  Learning Outcome
	    Student will reflect on some aspect of their practice
		Reflection	Professional Identity Pedagogies

APPLICATION

To demonstrate the approach with a concrete example an online case study in ethics and information stewardship will be used to show how a situative pedagogy can be applied to create a case-based situated learning environment. The case involves a manager who works for a company called Celltronics that produces content and services for the global communications industry but is interested in moving into the mobile game arena. The manager is approached about taking on a new position as a project manager for a new game called GameGirlz. The game will move the company into a new mobile games niche for girls, 14-19. Security is tight and the potential new manager is warned repeatedly that the project has the highest security in place. As the case unfolds it is revealed that Celltronics will be embedding code into the software to gather data about user behavior and preferences. Although technically not illegal and Celltronics plans on aggregating individual data so no user's individual behavior will be examined, this revelation opens up ethical questions about violation of privacy.

Eventually a situation arises related to information leaks to outside sources from somewhere within the company. Company officials contact the new manager with urgent requests to track down the employee. It turns out that a Celltronics employee has been running a blog site for some time that is actually quite respected in the industry but now he is revealing some inside company information related to the new project. This not only creates a competitive exposure but may lead to potentially damaging publicity. The project manager is asked to locate and deal with the company blogger to stop any potential damage to the project and the company reputation.

Applying a situated learning perspective to this case we can create a learning environment that addresses the three high-end cognitive apprenticeships. This can be done by introducing modeling, coaching and scaffolding techniques to the case through direct teaching, introduction of characters who serve as models of professional competence, or by structuring discussion or discourse activities in ways that guide students in contextual reasoning, reasoning in transition or other aspects of professional comportment. In general the case can address the high-end cognitive apprenticeships and address the need to structure case-based learning in a way that addresses the critical elements of situated learning.

Harkrider, et al (2013) recommended that case-based instruction provide support for a number of high-level cognitive skills and knowledge elements. By providing direct instruction of cognitive and metacognitive skills the case addresses the higher-level skills needed by the type of practitioner we have been discussing. Harkrider, et al advised that cases should:

- Cover a wide spectrum of cognitive levels.
- Incorporate tasks, knowledge and problem-solving skills learners are likely to encounter and apply in future practice.
- Assess students' knowledge and skills.
- Provide specific feedback to students.
- Provide expert modeling of problem-solving approaches.
- Provide explicit support for comparing and contrasting features, factors, and issues embedded in cases.

In our demonstration case about information security and stewardship learning outcomes related to the knowledge apprenticeship call for demonstrating knowledge of information and security and ethics and thinking like a professional in terms of career choices and thinking in transition. The skilled know-how

apprenticeship can address outcomes related to student skill in evidence-based practices in data collection and analysis and ethical considerations in management decision making. Finally, under the ethical comportment apprenticeship, learning outcomes can relate to student cultural or spiritual experiences students can draw on to make decisions that affect employees' careers.

Learning activities need to be defined that will help address the situated learning elements and transformative learning processes related to critical discourse and critical reflection. These components will be addressed primarily in discussions or group activities. Knowledge and skill outcomes tend to be related to the case material but may be connected to class activities, study groups or class discussions.

Table 2 shows an example of the situative learning design model applied to the structure for learning in the ethical information stewardship case.

Technology Affordances in Situated Learning Environments

As we move more cases into an online or hybrid format we need technology systems that can deliver instructional affordances that create a seamless situated learning experience whether students are learning in the classroom, outside the classroom in study groups or online. The technology system must allow the case designer to integrate online learning activities in a way that incorporates the elements of the high-level cognitive apprenticeships and provides for transformative learning. The situated learning environment should help students integrate the three apprenticeships into their developing professional identity. That is, the system affordances must provide two categories of learning opportunities:

Table 2. Design model for ethical information stewardship case

Apprenticeships/Learning Outcomes	Case Modules	Social Learning Methods	Affordances
Knowledge Apprenticeship Academic knowledge base and habits of mind important to the profession **Learning Outcomes** ● Student will demonstrate knowledge of privacy laws as they relate to companies and their employees ● Student will demonstrate ability to think like a manager when faced with a dynamically changing situation involving employee rights versus company requirements **Skilled Know-How-Apprenticeship** ● Skills that relates to practice, including professional practice judgment **Learning Outcomes** ● Student will demonstrate skill in collecting and analyzing user data ● Applying applicable legal principles related to security while balancing employee rights and satisfaction **Ethical Comportment Apprenticeship** ● Ethical standards, ethical comportment, social roles, and responsibilities of the profession. **Learning Outcomes** ● Student will reflect on cultural or spiritual influences in ethical decision making ● Student will demonstrate an understanding of how ethical issues intersect with managing decisions	**Case study and case notes** **Student study group** **Class activity-online discussion** **Class Discussion**	**Modeling of manager behavior in case study** **Student articulation of main issues related to information security** **Instructor Coaching in online discussion** **Student exploration of ethical issues**	**Pedagogy of Formation** **Providing guidance to students in Discourse/ Identity Affordances to increase participation** **Providing guidance to students in Interpretation and Contextualization of thinking in relation to ethical issues concerning the blogger**

- Help students learn in a way that integrates the three high-level apprenticeships with the goals of improving professional reasoning and formation of professional identity.
- Provide opportunities for transformative learning so they can develop into reflective practitioners.

The online instructional system component of the situated learning environment and the learning and assessment activities it supports, will need to be integrated with the in-place learning environments in ways that provide the perception of a seamless in-place and online learning rather than fragmenting the learning. In-place learning environments can be connected to the learning management system in the following ways:

- **Classes:** Focus on providing cases, and supporting material that help students apply knowledge to professional settings personally familiar to them and/or using the pedagogy of interpretation to bring their own experience to bear on issues in the case. Provide discussions, wikis, blogs, and real-world examples to provide discourse and reflective activities related to material covered in classes. Use the classroom for learning activities and discussions and complement these activities with online lectures or other learning activities that provide situated learning discourse and identity affordances.
- **Outside Applications:** Use the formation pedagogy to help students recognize discourse affordances that help them increase activity in learning communities and help to develop personal, professional identities. Create discussions and ask questions that require reflection and critical self-reflection and help students connect basic knowledge with practice in action. Table 3 provides some examples of discussion or activity questions that address the three cognitive apprenticeships.

New Developments

The original apprentice environments were shops and studios where master craftsmen created their products. The places of production were also the places for learning, the skills needed to create the products or crafts and teaching and learning were informal; and there was no need for record keeping. With the extension of apprenticeship methods to formal school learning there was a need to manage information related to tracking and assessment of the learning that was taking place. This limited the implementation of apprenticeship approaches in formal educational settings. Cognitive apprenticeship projects had to take place in physical classrooms and required direct delivery of instruction.

With the advent of learning management systems, tracking, recording and management of learning data became manageable. With the addition of capabilities for designing and managing instructional activities into learning management systems such as Blackboard™ and Canvas™ instruction could be delivered over distances and student progress can be tracked. Extending learning from classrooms to outside settings and attempting to create a single learning environment composed of both classroom and outside learning along with online learning puts faculty members closer to the goal of implementing a situated learning environment and capitalizing on the power of situated learning affordances. Merging of situated learning methods with instructional technology systems creates what Rosenheck (2013) called Cognitive Apprenticeship 2.0.

Unfortunately, learning management systems currently in use do not necessarily provide the opportunity to seriously link the material in the system with classroom and outside or online learning. Also, the technology for accessing the material is mainly in the form of stationary computers, cell phones

Table 3. Suggested discussion or activity questions

High-End Cognitive Apprenticeship	Discussion or Activity Questions
Professional Knowledge	
Ability to acquire and use knowledge that allows for thinking in ways typical of and important to the profession e.g., learning how to think like a manager, consultant or other professional practitioner	What are the information and security and ethics issues? How would you deal with them? When it comes to career choices, one must always consider the pluses and minuses of any decision. What are the issues related to this project that might influence your choice?
Professional knowledge creates habits of mind and allows for integration of skilled "know-how" and professional judgment	Given what you have heard so far, do you think you would be willing to take on the leadership of this project? Are there ethical issues with becoming involved in this project? If so, what are they?
Reasoning across time taking into account changes in the situation and changes in the practitioner's understanding of the situation	You decided to accept the job offer. What did you accept? Can you foresee anything that might occur to cause you to change your mind and decline the offer?
Reflective, self-improving practice to keep current with changes in ideas, knowledge and practices	Are you happy with your decision about whether or not to manage the project or do you wish you could reconsider?
Professional Practice Skills	
General and discipline- specific skills of professional practice.	What data are you going to collect from these 14-19 year-old girls? How are you going to store and analyze the data? How much personal information would you include, and is anonymity an issue?
Professional Conduct	
Professional attitude and awareness of the social roles and responsibilities of the profession	Is it acceptable to fire an employee because of something he or she posted on a blog?
Moral and ethical thinking	How do ethical issues intersect with your role and purpose as manager?
Cultural competence	Can you expect similar reactions across cultures if it is discovered that Celltronics is gathering personal data?
Professional socialization and identity	What cultural or spiritual values did you draw upon in making these decisions?
Emotional intelligence and interpersonal competencies	How would you find out which employee is feeding information to the news and what would you do about that employee?

with limited screen size and tablets with limited availability for content input by the students. What is needed are new forms of technology that are portable but contain better functionality for viewing and responding to instructional materials. Although the form factors are not clear yet, it seems inevitable that new learning technologies will be coming that allow for the creation of powerful, mobile situated learning environments.

CONCLUSION

To provide a sound foundation for case-based teaching, business education should turn to research in the learning sciences. Situated learning methods identified in this chapter can assist students in developing a professional perspective that is more ethical, reflective, integrative, situationally aware and able to create effective evidence-based solutions to professional problems. To help insure that cases are addressing the higher level thinking abilities it is important to incorporate direct instruction of cognitive

and metacognitive skills by integrating the three high-level apprenticeships. If schools of business and management want to produce reflective practitioners it is important to create a broader situated learning environment by integrating situated learning techniques with instructional technology which allows faculty members to extend the range of instruction from place-based settings to anytime, anywhere. Instructional technology also allows faculty members to address transformative learning through the design of technology-supported learning environments that provide options for teaching critical discourse and critical reflection. The direct incorporation of situated learning techniques can provide case-based education with the contexts needed to produce the reflective practitioner who can compete successfully in today's and tomorrow's dynamic business environment

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KEY TERMS AND DEFINITIONS

Affordances: Capabilities provided by technology to perform teaching and administrative duties in efficient ways.

Apprenticeship: Traditional method of training people into a profession that has powerful features for learning. Researchers such as Jean Lave, Allan Collins and John Seely Brown have identified effective learning and teaching techniques from apprenticeship learning and applied them to classroom learning.

Authentic Learning Activities: Online or in-class activities that mimic real-world issues or situations. In the business education this could be simulations, problem-based learning exercises or cases.

Cognitive Apprenticeship: Extension of apprenticeship training techniques to the teaching of cognitive and metacognitive skills.

Contextualization: Practical reasoning and requires that the practitioner select the elements of professional knowledge most relevant to the given context.

Formation: A pedagogy that produces habits of mind or what some have labeled habitus which is the ability to think in context and perform like a member of the profession.

Interpretation: A type of professional practice that includes the practitioner's ability to situate their learning and practices within their own experience and world view, a contextual awareness of the critical elements of the situation and the knowledge of best practices in their profession.

Learning Management System: A computer-based, online program that supports the creation of online spaces that contain many of the basic features of a traditional classroom.

Situated Learning: What some have called the situative perspective views learning and cognition as distributed over activity systems and communities of practice rather than residing strictly in the head of individuals. The situative perspective looks at learning, cognition, motivation and achievement as social activities and applies the sociocultural view to research in classroom learning.