# CLOSING GAP BETWEEN LEARNING AND USE: OPERATIONALIZING THE SITUATED COGNITION CONSTRUCT TO CREATE AUTHENTIC ONLINE LEARNING CONTEXTS

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**ABSTRACT**
In response to the need to improve quality in online learning, the present developmental study utilized the pedagogy advocated in situated cognition theory to create authentic learning contexts in online learning. An in-depth review of the literature in situated learning and online learning was conducted and six features of the situated cognition construct were identified and used as basis for creating a framework for operationalizing tasks in online learning environments. These features were specifically operationalized in a learning management system setting. In order to ensure quality, the framework was evaluated by one situated cognition expert and two online instructors and revised based on their feedback.

**INTRODUCTION**
Situated cognition or situated learning is an important theory that focuses on the whole process of learning. The theory outlines important implications for the design and development of classroom instruction, including the design of technology or computer based instruction. It is also a learning theory that accentuates and promotes real and authentic learning. In a situated learning environment, learning of skills and knowledge take place in contexts that reflect how that knowledge is acquired and applied in everyday situations (Lave & Wenger, 2003). Collins (2006) defined situated learning as "the notion of learning knowledge and skills in contexts that reflect the way the knowledge will be useful in real life" (p. 2). Against this background nonetheless, some scholars and theorists still assert that context in which learning takes place is secondary to the actual learning process. On the other hand however, Brown, et al. (1989) revealed through their studies and research on learning, that what is being learned cannot be separated from the context in which it is learned or applied, rather, it is an integral part of what is learned. The situated cognition theory proceeds on the latter body of knowledge and its proponents claim that human actions are dependent on the context in which they occur.
The present study utilized the pedagogy advocated in the situated cognition construct to create authentic learning contexts in online learning. The study specifically proposes scenarios to be delineated within a course shell in a learning management system that would promote authentic learning and close gap between learning and use for the online learner.

**SITUATED COGNITION: ANALYZING THE THEORY**
Herrington and Oliver (2000)  provided a nine element framework which effectively details the principles of situated cognition and provides some guidelines for implementation: (1) provide authentic content that reflects the way knowledge will be used in the real life  – nonlinear design, no attempt to  simplify,  (2) provide authentic activities – activities that have real world relevance, (3) provide  access to expert performances and the modeling of process-access  to social periphery, access to expert thinking, (4) provide multiple roles and perspectives –the opportunity to express different points of view, (5) support collaborative construction of knowledge – classroom organization into small groups, (6) promote reflection: opportunity for learners to compare with experts, (7) promote articulation – publicly present argument to enable defense of learning, (8) provide coaching and scaffolding – complex open-ended learning environment and (9) provide for authentic assessment – multiple indicators of learning.

It is interesting to note that the philosophy in situated cognition contradicts the emphasis in school and university which has been about extracting essential principles, concepts, and facts, and teaching them in an abstract and decontextualized form where information is stored as facts rather than as tools (Brown et al., 1989; Cole, 1990). Herrington and Oliver (2000) actually reiterated that much of the abstract knowledge taught in schools and universities is not retrievable in real-life problem-solving contexts, because this approach ignores the interdependence of situation and cognition.

A good example of the need to close gap between learning and use comes from the work of Miller and Gilder (1987) who worked on vocabulary teaching. Their work described how children are taught words from dictionary definitions and a few exemplary sentences. They compared this method with the way vocabulary is normally learned outside school.  They concluded that people generally learn words faster and successfully in the context of ordinary communication. Brown et al. (1989) complemented this work by contending that learning

from dictionaries, like any method that tries to teach abstract concepts independently of authentic situations, overlooks the way understanding is developed through continued, situated use. Brown et al. (1989) went on to elucidate the notion of learning and enculturation. They argued that from a very early age and throughout lives, people consciously or unconsciously adopt the behavior and belief systems of new social groups. Given the chance to observe and practice in situ, the behavior of members of a culture, imitate behavior and gradually start to act in accordance with its norms.  But then they observed that so too often, the practices of contemporary schooling deny students the chance to engage the relevant domain culture because that culture is not in evidence. For example, students may pass examinations but still not be able to use a domain's conceptual tools in authentic practice.

## REAL WORLD EXAMPLES

Lave (2008) provided various examples of learning as a situated phenomenon. A good example involved members of a weight watchers program problem-solving to determine appropriate food servings. Dieters were asked to prepare their lunch to meet observer specifications. They were to fix a serving of cottage cheese, supposing that the amount allotted for the meal was three-quarters of the two-thirds cup the program allowed. Interestingly, the problem solvers did it by filling a measuring cup two-thirds full of cottage cheese, dumping it out on a cutting board, patting it into a circle, marking a cross on it, scooping away one quadrant, and serving the rest. Instead of using a paper and pencil algorithm, problem, setting, and enactment were the means by which checking took place. As Brill (2006) observed, this example illustrates how individuals frequently use cues and tools from the environment to create artifacts in order to solve puzzles encountered in daily living much more often than by directly calling on formally-learned knowledge and skills.

Carraher, Carraher, and Schliemann (2005) observed Brazilian children solving simple mathematical problems as they sold produce on the street. These same children failed to solve the same problems when they were presented out of context in conventional mathematical form. For example, one nine-year-old child answered a customer's question regarding the price of three coconuts by counting aloud, "40, 80, 120." But then the same child arrived at a result of 70 when asked to multiply three by 40 on a formal test. From this episode, context seemed to help the child's ability to solve a mathematical problem. So, Collins (2006) identified four benefits of situated cognition as a learning theory. He argued that students learn about the conditions for applying knowledge. Also, students are more likely to engage in invention and problem-solving when they learn in novel and diverse situations and settings. Third, it enables students to see the implications of knowledge. Fourth and finally, students are supported in structuring knowledge in ways that are appropriate to later use by, importantly, gaining and working with that knowledge in context.

## AUTHENTIC LEARNING ENVIRONMENTS

A situated learning environment provides authentic activities which are ill-defined and students find as well as solve the problems. It is an environment where tasks can be integrated across subject areas, and it provides the opportunity to detect relevant and irrelevant material (Brown et al., 1989; Collins, Brown and Newman, 1989; Cognition and Technology Group at Vanderbilt [CTGV], 1990; Young, 1993). Learners in authentic learning environments participate in the actual experience (contextualized) rather than being external (decontextualized) to the event. Learning in context implies constructing an instructional environment that incorporates the tasks that learners must complete in order to be successful in their choice of practice. To be in context means learners interact with the values, norms, and true culture of a specific community or organization (Moore, 1998, Brown et al., 1989).

Driscoll (2005) recognized the importance of learning in context by emphasizing that learners who are learning in familiar contexts are more capable of relating new information than they would be in unfamiliar contexts. Brown et al. (1989) defined authentic activities as "the ordinary practices of the culture" (p. 6). More importantly, Choi and Hannafin (2005) contended that authentic activities are not simulated tasks or exercises that are usually found in formal education setting; they are actual real life activities that experts within the community perform while they are engaged in actual problem solving situations. Lave (2008) emphasized this point by providing the example of apprentice tailors who first start by only ironing finished garments and indicating that even though ironing is a very simple task, it still remains absolutely authentic. Against this background, Lave and Wenger (2003) observed that school activity too often tends to be hybrid, implicitly framed by one culture, but explicitly attributed to another. Many activities students undertake, they argued, are simply not the activities of practitioners and would not make sense or be endorsed by the cultures to which they are attributed. Lave and Wenger (2003) went on to contend that when authentic activities are transferred to the classroom, their context is inevitably transmuted; they become classroom tasks and part of the school culture. But then Brown et al. (1989) went on to emphasize that the activities of a domain are framed by its culture. Their meaning and purpose are socially constructed through negotiations among present and past members. Authentic

activities then are most simply defined as the ordinary practices of the culture.

## ASSESSMENT IN SITUATED COGNITION

Choi and Hannafin (1995) contended that the content of tests has an impact on both learning and instructional processes. They stated that in many cases, teachers often "teach to the test" (p. 63). When students eventually realize that they are being tested on their ability to recall the information that the teacher has presented, they start to memorize the required information, which in turn decontextualizes their knowledge, and learning becomes merely learning for the test. Altalib (2009) complemented this view by observing that adopting a situated learning strategy impacts the way in which learners must be assessed.  He went on to mention that many of the traditional standardized tests that are administered, and the instructor constructed exams fall short of being able to measure many learning outcomes.

Several scholars have argued for the need to have assessment and learning in situated learning contexts done as part of learning rather than separated from it (Case, 2015; McLellan, 1995; Young, 1995, 1998). McLellan (1995) contended that evaluation in a situated learning context is based on dynamic, continuous, ever-emerging assessment of the learning process, the learner's progress, the instructional strategies deployed, and the learning environment. The goal according to McLellan (1995), is to better customize the instruction, adapting and refining instructional strategies to invoke and improve the learner's progress toward mastery. She went on to argue that evaluation must be inextricably coupled with learning, not set apart from it, since knowledge is situated. That knowledge is a product of the activity, context and culture in which it is developed and used, and must be evaluated as such. In fact, Young (1995) shared this view by arguing that assessment can no longer be viewed as an add-on to an instructional design or simply as separate stages in a linear process of pretest, instruction, and posttest. Rather, assessment must become an integrated, ongoing and seamless part of the learning environment. Case (2015) had actually argued that assessment must not only be integrated with instruction but must focus on the learning process as well as the learning products. Young (1995) went on to assert that multiple-choice items that assess the static factual knowledge of students must be replaced by cognitive tasks and assessments that can focus on the processes of learning, perception and problem solving. Young (1998) further argued that first assessment must emphasize process as much as product, second, assessment must move away from a linear additive model and accept at the onset, the complex, nonlinear and possibly chaotic nature of real learning, that is to say, assessment must acknowledge that learning, knowledge and thinking are situated as much and as such, they are inherently nonlinear. Finally, assessment must adapt to and take advantage of students working with technologies that extend perceptual and problem solving-capacities beyond what they could do standing alone on a desert island. It appears from their arguments then,  that these scholars believe that it is more reasonable to conduct assessment alongside learning for it to make sense and assist learners make meaning of what they learn rather than make the two (learning and assessment) devoid of one another. The scholars, it appears, believe that while students learn, it is important to assess them on tasks that allow them to solve realistic problems.

## COLLINS' MODELFOR ASSESSMENT IN SITUATED LEARNING CONTEXTS

Collins (1996) proposed a scenario for integrated learning and evaluation in a computer learning environment that could serve as a model for evaluation in situated learning environments. Collins' scenario included three kinds of evaluation measures; diagnosis, summary statistics, and portfolios. Portfolios, he argued, consist of learner-created products that reflect the processes of learning and development over time. Summary statistics show patterns and trends in the learner's development. Diagnosis is based on many kinds of information including portfolios and summary statistics, as well as teacher's continuous assessment of the learner's progress and capabilities. Diagnosis is dynamic, on-going, the teacher must at every moment analyze the progress of the learners and adapt or customize the methods, sequencing, and other conditions of learning to meet the emergent needs of the learners in real time. This, according to Collins, demands great skill on the part of the teacher. Collins (1996) explained that his model of evaluation derives from professional sports where extensive records are kept on players. While supporting Collins' model, McLellan (1995) contended that learning activities that center on reflection and self-assessment are extremely valuable for diagnosis. Reflection enables students to compare their own problem-solving processes with those of an expert, and another student, and ultimately, an internal cognitive model of expertise. In the final analysis, McLellan (1995) recommended that this three-part model proposed by Collins (1996) be adopted as an approach to assessing situated learning with the three parts providing different kinds of assessment measures.

Young (1995) argued that "the true test for successful learning is transfer of learners' skills from the situations in which they are learned to novel situations in which the relevant knowledge could also be applied" (p. 49). However Winn (2003) observed that the flexibility in performance that this requires is endangered not by placing students in all the situations in which their knowledge and skill will be applied, but teaching at a level of

generality that allows application in multiple settings.  Interestingly, Winn (2003) contended that in spite of a great deal of research on transfer, there is still little knowledge on how to promote it.
Studies on Situated Cognition

Research conducted by Lave (2008) provided evidence for the claim that the learner engages in situational meaning-making and acts upon this understanding to create plans for action. Lave's ethnographic studies in schools indicated that although a teacher had engaged in teaching a specific algorithimic problem solving strategy in a mathematics class, students' perceptions  of the problem were conceptualized with reference to contexts larger than the restrictive parameters of the math problem statements and teacher expectations of how to answer the questions. For the students, the problem definition also included getting the right answer to satisfy the teacher's requirements. So, the problem of the students was not, it seemed, the acquisition of substantive knowledge and skills for use beyond the classroom, but rather the attainment of more immediate objectives, namely to please the teacher and presubably, earn a good grade. This contextually sensitive dynamic is what a theory of situated cognition attempts to identify and explain.

Herrington and Oliver (2000) conducted a qualitative study to determine the possibility of applying a model of instructional design based on the theory of situated learning to the design of a multimedia environment for university students. The study was done in three inter-related stages: First,  to identify critical characteristics of a situated learning environment from the literature, to operationalize the critical characteristics of a situated learning environment by designing a multimedia program that incorporated the identified characteristics, and third,  to investigate students' perceptions of their experiences using (the) multimedia package based on situated learning framework.  Eight students were observed and interviewed. Findings suggested that the use of the situated learning framework provided effective instructional design guidelines for the design of an environment for the acquisition of advanced knowledge.

Griffin and Griffin (2006) investigated the impact of situated cognition on short- and long-term retention of map skills among fourth graders and the effect of cognitive style on their learning. Fourth-grade students were assigned either to situated-cognition instruction using cognitive apprenticeship or to a conventional-instruction treatment. The conventional-instruction group performed significantly better than the situated-cognition group on the immediate post written measure of map skills. This finding contradicted those of Griffin (2005), who had found no differences between groups on written assessments. More importantly, this called into question the proposition by Brown et al. (1989) that situated cognition produces more robust knowledge that encompasses and surpasses that provided by conventional instruction.

Herrington, Sparrow, Herrington and Oliver (2007) developed a program to introduce prospective primary and secondary mathematics teachers to a variety of assessment strategies used in K-12 mathematics classrooms. The program consisted of a CD-ROM which contained information on 23 assessment techniques.  The data resulted from a wider study into students' use of interactive multimedia based on a situated learning framework. The data were obtained from observation and interviews with eight pre-service teachers and education undergraduate students. The students were given a complex assessment task that was sustained and ill-defined investigation of the resource and were required to prepare both a written report (to be assessed by the instructor), and an oral presentation to be made to a simulated school staff meeting (to be assessed by their peers). Upon being interviewed at the conclusion of the class presentations, generally, the students found that being assessed within the context of a teacher presenting a report to his or her colleagues during a staff meeting was a useful one. By and large, the students appreciated the opportunity to be assessed in a real life, simulated context. The findings of this study suggested that authentic assessment can be used successfully within an interactive multimedia learning environment. The students' comments revealed their perception that university education is relatively impoverished of authenticity, where students are required to absorb factual information provided in a "transmission" style of delivery largely devoid of any real-life relevance.

Cole et al. (2005) organized a series of activities involving reading, writing, and human-computer interaction tasks for children in elementary school. These activities were implemented in four different institutional contexts: School, a library, a youth club, and a kindergarten. Results showed that the children were performing the tasks very differently from context to context, depending on their own interpretation of the setting and on the social relations developed in each of them. Again, in his study, Lave (2008) demonstrated that participants show elaborate skills in a practical context (such as calculating prices on the market or calories in the everyday preparation of meals) while sometimes obtaining very poor scores in formal tests.

A study by Mondada and Doehler (2004) explored the interactive (re)- configuration of tasks in French second language classrooms. Stressing that learning is situated  in learners' social, and therefore profoundly interactional

practices, the study investigated how tasks are not only accomplished but also collaboratively (re)organized by learners and teachers, leading to various configurations of classroom talk and structuring specific opportunities for learning. Recordings in classes specifically designed for newly arrived children between 10 and 12 years of age were made. The study found that there is need to go far beyond merely postulating activity as a contextual phenomenon but to also recognize that cognitive processes in general and language acquisition in particular are publicly deployed, socio-interactionally configured, and contextually contingent.

In general, these studies emphasize the importance of situating or contextualizing the learning of knowledge and skills which as indicated, promotes meaning-making on the part of the learner as it simulates the environment in which the knowledge will be applied. The studies further indicate that it is important to rid education of the practice where learning is relatively devoid of authenticity and where students merely absorb factual information without any real-life relevance.

## ONLINE LEARNING PEDAGOGY

Online learning, has increased as an innovative and/or alternative form of education especially with the proliferation of a wide bandwidth Internet and various web technologies (Broadbent & Poon, 2015; Means, et al., 2010). The term online learning itself has evolved over the past few decades. In this study, online learning refers to learning delivered asynchronously through a learning management system (LMS).

Online courses comprise a number of features that are different from those of traditional classroom courses. One clear difference is the ability to access course material from outside the classroom through the Internet. Learners are able to access course material at their convenience. This type of any-time/any-place access enables students in an online learning environment more control over their own learning, a necessity for the constructivist view on education (Palocsay & Stevens, 2008). As Choi (2016) contended, online learning environments are very distinctive instructional environments in which the learner and instructor are physically separated, but communication is mediated by online technologies. To that end, viable technologies become a critical component of the whole learning process. And so, one issue that affects online courses to a greater extent than traditional courses is the rapid pace of technological change. A potential problem with online courses for instance, could be students spending too much time trying to learn how to use the technology required to access the course instead of concentrating on the actual course material. (Leidner & Jarvenpaa, 2005).

Another challenge associated with online courses is the increased effort required by instructors to design and develop an online course. It has been shown that online courses have a higher level of student initiated communication, which often requires the instructor to take a great deal of time to respond to student questions (Arbaugh & Rau, 2007). This increase in faculty to student communication may make instructors hesitant to implement online courses. The online course should therefore be developed before the course begins. A full set of modules or units, detailed projects and solutions, readings, and other materials should be made ready before the course begins (Schell & Janick, 2012).

As Schell and Janick (2012) contended, online courses are effective and support both faculty/student interaction as well as student/student interaction in ways that allow students to construct knowledge and learn to formulate processes for learning new material. Against this background, Palloff and Pratt (2007) reiterated the importance of making sure that the instructor has stronger presence in online learning environments and that the course itself needs to create a learning community amongst participants. Again, Hart (2012)'s meta-analysis of the literature on student persistence in online learning programs found that the following factors were associated with persistence: A sense of belonging to the learning community, motivation, peer, and family support, time management skills, and increased communication with the instructor. It can be inferred from these findings that good communication, support, a feel of belongingness and time management skills become very crucial to the success of an online learner.

It is clear that online learning continues to grow in popularity with the whole concept of any-time/any-place access being a huge advantage. From the literature, it can be deduced that communication mediated by technological applications becomes a crucial part of the whole process of learning in online environments. Again, it does follow that pedagogies that support student engagement and building a learning community are likely to result in positive cognition.

## RESEARCH DESIGN AND METHODOLOGY

## PURPOSE OF STUDY

The purpose of this study was to develop a framework for creating online authentic learning contexts utilizing the philosophy in the situated cognition construct. It was planned that the framework would be used by online instructors in a learning management teaching environment.

## DEVELOPMENTAL RESEARCH STUDIES

Developmental research studies involve the production of knowledge with the ultimate aim of improving the process of instructional design, development, and evaluation. Such research is based on either situation-specific problem solving or generalized inquiry procedures (Richey & Klein, 2007; Richey, Klein & Nelson, 2004). A content analysis of the relevant literature indicated that situated cognition sets ground for authentic learning experience (Brown, 2006; Collins, Brown & Newman, 2009). The present framework carefully utilized this thinking to delineate contexts in online learning environments that would essentially result in authentic learning and purportedly close gap between learning and use.  The framework was evaluated by a situated cognition expert and two online instructors before it was revised.

## AUNTEHITIC LEARNING IN ONLINE LEARNING ENVIRONMENTS OPERATIONALIZED

Based on the situated cognition strategies identified from the literature espoused, and improved upon by recommendations from a situated cognition expert reviewer and two online instructors, a framework for creating authentic online learning environments was created. The framework would be used by online instructors in a learning management system environment to teach concepts using strategies that would essentially create authentic learning contexts.

## STRATEGIES TO SUPPORT COLLABORATIVE CONSTRUCTION OF KNOWLEDGE

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Strategies to Support collaborative construction of knowledge – classroom organization into small groups (Herrington & Oliver, 2000).

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Example: Using the discussions feature in a learning management system environment to teach concepts in small groups:

- In a learning management system such as Canvas or Blackboard, break students in groups of three to four using the "people" or "groups" feature.
- Within each small group, allocate a discussion topic on any given concept being taught.
- Let group members post to discussion topic within their group.
- Make sure threaded replies are enabled.
- At end of each small group discussion, let each group present a summary of their discussion in a class-wide discussion topic.
- Allow individual class members to post in plenary, summary discussion
- Instructor, make comments as necessary by posting in class-wide summary discussion.

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Table 1. Collaborative construction of knowledge

## STRATEGIES TO PROMOTE ARTICULATION

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Situated Task:  Promote articulation - groups to enable articulation, publicly present arguments to enable defense of learning (Collins, 2006; Herrington & Oliver, 2000).

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Example: Using the discussions feature in a learning management system to run an asynchronous class debate:

- In a learning management system such as Canvas or Blackboard, create a discussion on a contentious topic.
- Divide class into two groups using any relevant criteria. Let each group take sides on the contentious

topic.
- Let instructor be chair, leading a debate on the topic by introducing it to the two groups.
- Let members from each group weigh in on the topic by posting to the discussion asynchronously.
- Let debate run for specified period of time with threaded replies allowed.
- At end of discussion, let each side make closing arguments on the topic.
- On final day of discussion, instructor closes debate by summarizing arguments from the two groups, making clarifications and elaborating.

Table 2. Promoting articulation

## STRATEGIES TO CONDUCT ASSESSMENT AS PART OF LEARNING
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Situated Task:  Assessment should be done as part of learning rather than separated from it. It must become an integrated, ongoing and seamless part of the learning environment (Case, 2015; McLellan, 1995; Young, 1993, 1995).
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Example: Using field observations in a communication class:

- In a learning management system such as Canvas or Blackboard, let any given lesson be based on field trip observation and reporting.
- For example, on a topic such as interpersonal communication, create a module page that teaches interpersonal communication by providing modalities for a field trip observation.
- Begin by defining interpersonal communication from the literature and provide relevant examples.
- Ask students to go and observe a court session in their community and identify any five aspects of interpersonal communication at play in the court room. Let students earn say four points for each aspect identified.
- For each aspect of interpersonal communication students identify in a court session, ask them to briefly describe a scenario that justifies their identification of that aspect. Allocate say five points for each brief description.
- Ask students turn in their observations in a drop box created for the project.
- Create a discussion topic on which each student summarizes their filed observations by posting to the discussion. Allocate 10 points for completing this specific activity.
- Let each student post a comment to at least two summaries provided by fellow students and allocate five points for each post.

Table 3. Assessment as part of learning

## STRATEGIES TO PROMOTE REFLECTION
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Situated Task:  Using portfolios as an evaluation measure - Portfolios, consist of learner-created products that reflect the processes of learning and development over time. Learning activities that center on reflection and self-assessment are extremely valuable for diagnosis (Collins, 2006; McLellan, 1995).
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Example: Using e-portfolios to enable online learners reflect on the process of learning over the course of a semester:

- In a learning management system such as Canvas or Moodle, include an e-portfolio project as a measure of students' progress to run from beginning of a course to the end.
- As course progresses, let students record outstanding lessons they get from each topic by taking reflection notes each week.
- As course progresses, let students record outstanding issues they faced from each topic by taking reflection notes each week.
- At end of semester, let students glean all reflections to produce an e-portfolio.
- Normally, learning management systems have provision for producing e-portfolios. Walk students into utilizing this facility to create their e-portfolios.

- An e-portfolio of this nature can comprise the following: What I learned from each topic, what issues I faced in each topic, what I learned from the course as a whole, how I will use knowledge gained from this course.
- Allocate say 100 points for this assignment and make sure it counts towards final grade. This will motivate students to complete the project.

Table 4. Promote reflection

## STRATEGIES TO ENABLE LEARNERS SOLVE PROBLEMS IN REAL LIFE

Situated task: Authentic activities as actual real life activities that must be performed within the community in actual problem solving situations (Choi & Hannafin, 2005).

Example: Engaging learners in assignments that involve them in real life problem-solving situations:

- In a learning management system such as Blackboard, Canvas or Moodle, create a field study project as one of the assignments.
- For example, in an online education course, a field project requires students to make four visits to an elementary school in each student's community with prior arrangements made with schools.
- While on school visit, student attends classes, talks to teachers, staff, administrators
- Student identifies a problem of any nature, be it academic (concerning teaching and learning, student behavior) or administrative.
- Student analyzes problem and proposes a solution to the problem.
- After field visit, each student comes up with a write-up which begins with a description of the problem followed by a proposed solution.
- Write-up is turned in via the relevant learning management system drop-box to be graded.
- A separate discussion topic is created where students briefly share what problem they identified from their field visits and the solution they proposed triggering an open discussion.
- Points are earned from field observations, problem description, proposed solution and discussion participation.

Table 5. Learners to solve problems in real life

## STRATEGIES TO CREATE AUTHENTIC CONTEXTS THAT REFLECT THE WAY KNOWLEDGE WILL BE USED IN REAL LIFE

Situated Task:  Provide authentic context that reflects the way knowledge will be used in real life (Brown, Collins & Duguid, 1989; Collins, 2006; Herrington & Oliver, 2000; 1993, Young, 1995).

Example: Learning business concepts in a business environment:

- While teaching a concept such as "the major functions of business"  in an introduction to business class, in an LMS module page, begin the topic by asking online students to read a chapter from an assigned text that talks about the concept being taught.
- In the relevant module, ask online students to come up with five questions from the chapter that was assigned to them.
- Questions should focus on application of the concepts learnt to an authentic business environment.
- Let every student make an appointment with a business manager of their choice in their community.
- After the conversation with a business manager, each student comes up with a write-up specifically focusing on how the concepts they read from the assigned chapter apply in the business they visited.
- Students turn in write ups through LMS drop box to be graded.
- Each student discusses their work in an open discussion set up for that purpose in the LMS.

## CONCLUSION
In the development of the framework for creating authentic learning contexts in online learning, an in-depth review of the literature on the two domains, situated learning and online learning pedagogy was conducted and a criterion for the study, based upon six features of situated cognition theory was used as a basis for

operationalizing six tasks. A framework has, therefore, been delimited that instructors would use in a learning management system environment to employ authentic learning strategies that would essentially close gap between learning and use. Development of the framework was guided by thoughts gleaned from the literature on the domains, situated learning and online learning pedagogy. Again, order to ensure quality, the Framework was evaluated by a situated cognition expert and two online instructors who provided constructive feedback for improvement. The framework was, therefore, revised in line with the suggestions provided in the feedback from the three experts.

Table 6. Create authentic contexts

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