

# A Case Study of a Project-Management-Centered (PMC) Approach to Knowledge Management in Online Learning Environments

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## ABSTRACT

*The Office of Online Learning at Walsh College takes responsibility for delivering high-quality online programs at undergraduate and graduate levels. The department has adopted a project-management-centered (PMC) approach to knowledge management that has shown demonstrable efficiencies in the amount of resources required and the total time to complete implementations, while realizing gains in overall satisfaction and quality. This paper explores the PMC approach and the advantages realized to Walsh College.*

## INTRODUCTION

When you are in the business of providing high-quality education to your student body, managing the distribution of knowledge is critical. At the Walsh College School of Accountancy and Business Administration, our motto is “from the boardroom to the classroom,” so we constantly need to find ways to make knowledge *flow* from the boardroom to the classroom – whether that classroom is an actual classroom or a virtual classroom delivered through a Learning Management System (LMS).

As Walsh College’s Office of Online Learning, our department takes responsibility for delivering the high-quality online programs offered by Walsh College. Within this sphere of responsibility, the department is commissioned with rolling out new degree programs designed to provide our graduates with the tools they need in a competitive job market while continuing to evolve existing programs in lock-step with the current business climate. These two tasks alone involve managing many changes to our knowledge base; courses are being updated on a constant basis. Further, there is a business need to incorporate the most effective online learning pedagogies and technologies available in everything we deliver so that our courses are not only relevant, but effective and of the highest quality.

A final challenge is that there is constant pressure to “do more with the resources at hand,” which is a pressure that exists almost everywhere in the current business climate. Tandem with this challenge is speed at which courses are requested to be developed and updated. A recently published article by Eric Park focuses on the decrease in development time for courses and maintains that the rate of course development has already moved from two to four months to one to two months. Utilizing a development process that includes steps for rapid course development and updating is critical (Park, December 2006). Additionally, a study released by Bersin and Associates in 2004 states, “There’s a new training category emerging, which we call ‘Rapid E-Learning.’ It is a whole new approach to Internet-based training - one that changes the development model, leverages new tools, and dramatically changes the economics of content development” (DeVries, 2004). So, the approach used for distributing knowledge to our students needs to be an efficient one that makes maximum use of the resources at hand.

The challenges faced by Walsh College are not unique; there is often a need for businesses to manage the distribution of knowledge that is ever-evolving in such a way that it is relevant and timely to their employees. Often, the question is not “*What* knowledge are we going to deliver?” but “*How* are we going to deliver this knowledge?” Following a project-management-centered (PMC) knowledge

management approach has helped the Office of Online Learning deal with this challenge in a systematic way.

What is a PMC Knowledge Management approach? It is an approach that treats knowledge management in such a way that it has a lifecycle similar to a software development lifecycle. That is, PMC Knowledge Management has several *phases* that closely resemble phases used to develop complicated pieces of software. Specifically, the PMC Knowledge Management can be described as having the following phases:

1. Gathering knowledge from a subject matter expert (SME)
2. Defining outcomes for the knowledge
3. Specifying the methods by which knowledge will be delivered
4. Ensuring that methods are consistent with outcomes
5. Development of the knowledge for distribution
6. Review of the materials by the instructional designer and the SME
7. Training the SME in how to maintain and update developed knowledge
8. Maintenance of the knowledge
9. Archival\Re-Use\ Destruction of knowledge

All phases of the PMC Knowledge Management approach are managed in a similar way to a client-vendor-customer relationship. In such an approach, a client asks a vendor to solve a particular problem *on behalf* of the customer. In many cases the client knows *what* problem needs to be addressed by the vendor, but not *how* to solve the problem. However, the client and the vendor are both responsible for making sure that the customer is ultimately satisfied.

PMC Knowledge Management in the educational sector works in a fashion where instructors are considered to be “clients,” students are “customers,” leaving agents of the institution responsible for implementation of knowledge management to be the “vendor.” As such, each aspect of a particular knowledge management implementation (in this case course development) needs to be managed in a similar fashion to how a project manager manages a software implementation. One person or team is ultimately responsible for all aspects of the process of delivering a particular implementation, and that person or team is that primary point of contact with the “client” (the instructor). At Walsh College, the team charged with this responsibility is a team of Instructional Designers.

## THE INSTRUCTIONAL DESIGNER ROLE IN PMC KNOWLEDGE MANAGEMENT

It is important to understand how the instructional designer working in a PMC Knowledge Management environment is different than that of a traditional instructional designer. Traditionally in education, the instructional designer’s role is that of a *guide* who recommends effective teaching and assessment strategies to faculty. In PMC knowledge management, their role is expanded so that they *manage the flow of knowledge* throughout the entire implementation. The instructional designer is involved in *every phase* of a knowledge management implementation; they drive the process from start to finish, building solid instructional design into

every phase of the final product. A more detailed exploration of the instructional designer's role in every phase of the implementation is as follows:

### Phase 1: Gathering Knowledge from a SME

During this phase, the instructional designer works with the SME to set timelines for turnover of "raw" content and sets up a framework for how that content will be delivered throughout the knowledge management implementation. Each SME is contacted by an instructional designer, who sets clear expectations for what the SME needs to provide, a timeline for material delivery, and how the instructional designer works with them throughout the entire process. Instructional terminology such as outcomes and objectives is also discussed. This has the effect of immediately giving a SME a clear understanding of what their involvement will be throughout the implementation. The relationship between SME and the instructional designer is approached as a *partnership* where the SME is responsible for developing outcomes, course materials, and assessments. The instructional designer's role is to serve as their primary point of communication and material refinement within the Office of Online Learning. Together, the SME and the instructional designer guide the direction of the implementation through its development.

### Phase 2: Defining Outcomes for the Knowledge

It may seem counter-intuitive to determine outcomes for knowledge *after* knowledge is gathered, but in the academic arena, a SME will often have a textbook and publisher supplied ancillary material (PowerPoints, glossaries, test banks, videos, etc.) in hand that needs to be looked at critically and its usefulness determined. The instructional designer works with the SME to *prioritize* what things they want their students to know, develop outcomes based on those priorities, and then (more often than not) go back to phase 1 in order to reconcile any gaps between what has been delivered and what the outcomes are.

### Phase 3: Specifying the Methods by which Knowledge will be Delivered

Once the SME and the instructional designer have determined that there is enough delivered knowledge to meet the specified outcomes for the implementation, they work together to build a roadmap (syllabus) of *how* that knowledge will be delivered. The instructional designer assists the SME in breaking up knowledge into manageable "chunks" that address the learning styles of many different types of learners. Best practices and the most effective learning pedagogies are employed in this phase, ensuring that the knowledge is delivered in ways that are accessible to learners in their optimal learning style.

### Phase 4: Ensuring that Methods are consistent with Outcomes

A critical review by the instructional designer and the SME is done in this phase that serves as a "reality check" that ensures all outcomes are effectively being met before the actual development of content for delivery begins. The instructional designer and the SME review each "chunk" of knowledge certify that knowledge is consistently and clearly mapped back to predetermined outcomes for the implementation. Failure in completing this step often leads to knowledge that is diluted and unclear, which produces an unsatisfactory learning result.

### Phase 5: Development of the Knowledge for Distribution

At this point in the process, the knowledge is ready to be developed for delivery. The instructional designer's role in this step is not so much the actual development, but ensuring that the development team has a clear understanding of how to develop the implementation.

Half of this responsibility involves establishing clear communication of what is to be developed. For this, tools can be employed to help manage the interaction between instructional designers and developers. It is critical that these tools serve as a platform for clear communication of the work that needs to be done for the implementation. It is equally important that these tools allow the instructional designer and the developer to consistently track which pieces of work are being done by whom, so that where an implementation stands is never in question.

The other half of this equation involves setting standards that establish what is appropriate and inappropriate for the implementation. For example, a particular color combination may be inappropriate for people with color blindness. Or, the use of certain animations may be distracting to the learner. Clear documentation of these standards eliminates any confusion in this regard.

It is absolutely critical that these factors are established ahead of time so that consistent delivery of knowledge is assured, particularly when multiple developers are working on a particular implementation.

### Phase 6: Review of the Materials by the Instructional Designer and the SME

As knowledge is developed and delivered, the instructional designer and the SME go through what has been delivered to ensure it is consistent with what was planned. Developed materials that do not meet expectations are sent back for redevelopment and re-checked when they are once again ready for review. At this point in the process, a knowledge management implementation reaches a stage where it is considered "feature complete". The materials, ancillary materials, videos, etc. are all in an organized and presentable state that is ready for the learner.

### Phase 7: Training the SME in How to Maintain and Update Developed Knowledge

Although the knowledge management implementation is "feature complete" at this point, the SME needs to learn how to maintain the knowledge. In academia, it is common for textbook editions to change, or have textbooks that contain old or inaccurate knowledge. The SME needs to be able to update the knowledge as needed.

The instructional designers take on the role of showing instructor how to manage their own knowledge, walking them through the mechanics of how to make their changes. More importantly, they instill a "value set" in the SME that allows them to make good decisions on how to approach making changes. For example, adding an entirely new knowledge topic to an implementation may require the setting of new objectives or obsolescing old objectives.

### Phase 8: Maintenance of the Knowledge

At times, it becomes necessary for the instructional designer to work with the SME and evaluate how the knowledge is being maintained and delivered. Two critical evaluations of the knowledge are performed at this point.

The first evaluation involves ensuring that knowledge is still mapping to current outcomes and that currency of presented knowledge is assured. As knowledge is maintained over a period of time, there is a tendency for an implementation to creep beyond its original stated objectives. This will result in knowledge and objectives not being consistently aligned. Further, there is a valid tendency of the SME to never completely discard knowledge that is obsolete, which can create a "clutter" problem throughout the implementation. The instructional designer works with the SME to ensure such issues are resolved.

The second evaluation involves taking a fresh look at the implementation for ways to improve it. For example, there might be a new compression utility available for videos that delivers a higher quality result. Additionally, it is possible that the SME wants to completely alter the way they teach a concept in such a way that the learning becomes more interactive. The instructional designer works with the SME in much the same way as they work in phase 3 of the process to determine the most effective ways to deliver the new ideas for the existing knowledge.

### Phase 9: Archival\Re-Use\ Destruction of Knowledge

Finally, there will always come a point where knowledge reaches the end of its useful life. The instructional designer works with the SME to determine which pieces of knowledge should be reused in another implementation, archived for further reference, or destroyed entirely. Items that are to be reused or archived are ultimately placed into a library for easy retrieval and have their contents catalogued.

From the more detailed overview of the phases in PMC knowledge management, it is evident that the instructional designer is more than just a "guide" to instructors. Rather, they serve in much the same fashion as project managers do for projects. They manage the whole knowledge management implementation from start to finish, providing critical guidance to the SME and the developers through each phase of an implementation.

Further, the phases outlined in PMC Knowledge Management create a framework for managing change. Knowledge does not often remain static, so establishing an effective and clear framework for managing the changes to knowledge is an

integral part of how quality and consistency are achieved in knowledge management implementations over time.

### THE BENEFITS OF PMC KNOWLEDGE MANAGEMENT

The benefits of PMC Knowledge Management realized to Walsh College's Office of Online Learning have been enormous. We are truly able to deliver "more with the resources at hand" consistently and effectively with a relatively small team of highly-motivated people, which is reflective of how market conditions exist today. Further, PMC Knowledge Management has allowed our department to deliver more effectively on our promise to deliver knowledge "from the boardroom to the classroom" at quality levels we had never been able to achieve before, all at a lower cost. This may seem counterintuitive, as a nine-phase process can look unwieldy and expensive at first glance. In reality, however, our instructional designers are finding that they are able to handle several knowledge management implementations at one time by setting clear expectations up front, establishing open channels of communication with each SME, and staying on top of the flow of knowledge into the department.

To further demonstrate the benefits of the PMC Knowledge Management approach, here are some key benefits realized to Walsh College within one year of implementation:

1. Increasing the number of knowledge management implementations (course development) the department is able to handle at one time *five-fold* from 3 – 4 implementations to 15 – 20, with no increase in staff.
2. There has been a drastic reduction in the number of support problems associated with new courses from both new faculty and students.
3. Complete remediation to newer and more effective online learning pedagogies for over 50 existing online courses has taken place.
4. The Office of Online Learning has been able to manage double-digit growth in both the number of courses offered each semester and the number of students taking courses online.
5. Ensuring that student satisfaction with online courses is consistently high across all programs.
6. Increasing overall student satisfaction by an average of 14% for courses running for the first time that are facilitated by a SME who is actively engaged throughout all phases of course development.
7. The Office of Online Learning has created and fostered a culture when change is planned for and managed on a consistent basis.
8. Consistently receiving high levels of satisfaction with the end product from each SME developing new or updating existing courses. This has encouraged many who were skeptical about online learning to delve into creating their own online courses.

### CONCLUSION

A PMC Knowledge Management approach can be a very effective tool for managing a large number of simultaneous knowledge management implementations. PMC Knowledge Management can set up a framework for dealing with change consistently and effectively. Finally, PMC Knowledge Management can help manage large knowledge management implementations with greater efficiency than can be achieved without having them in place.

Put together, these factors can create highly successful teams that are charged with managing all phases of knowledge management and create a culture of innovation that pervades an entire program.

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