



---

## **PDPIE FRAMEWORK: ONLINE COURSE DEVELOPMENT QUALITY CYCLE**

*Afsaneh Sharif, University of British Columbia, Canada, Merce Gisbert, Universitat Rovira I Virgil, Spain*

---

### **Introduction**

The growth of online education, new approaches for its delivery, its convergence with on-campus learning, and its global impacts have created considerable discussions in quality of online learning all around the world. This has also brought educators' attention into the practice of those professionals involved in online course development including instructional designers who are the key professionals involved in online course development. Planning, Design, Production, Implementation, Evaluation (PDPIE) Framework is an online course development quality framework which is the result/outcome of a PhD study conducted in Spain and Canada. The study and observation of the evolution of technology, instructors and learners' roles, and instructional designers' cultural and educational differences led to development of a flexible online course development guideline within this field. The guideline can be found at [http://wiki.ubc.ca/Design\\_Quality\\_OnlineCourse](http://wiki.ubc.ca/Design_Quality_OnlineCourse) (Sharif, 2014)

### **Context and methodology**

The PhD study took a comprehensive look at the key elements for quality online courses within the field of instructional design by examining the core elements of effective design in existing guidelines and benchmarks while taking into consideration the impact of instructional designers' cultural and educational backgrounds. The research also explored key factors for a quality online course in different phases of the course development process. To gain a better understanding of the ways in which designers approach their work and strive for a good-quality result, different research methods were used in this study. A quantitative approach, which included surveys in different steps and locations, was used to gather the elements that 52 designers focus on and find critical in their quality design. The surveys were conducted in both Spain and Canada to examine the impact of culture on core elements of design. A qualitative approach, an interview, was the main focus of this study and was used to explore the views of a good-quality course, examining the backgrounds and experiences of eight instructional designers and their views of "an ideal course". Similar to other professionals in the fields, the instructional designers in this study agreed that having a guideline or a policy was important that is also supported by other professionals in the field (Barker, 2001; Beck, 1997; Herrington, Herrington, Oliver, Stoney, & Willis, 2001); however, they emphasized that the guidelines need to be flexible. They argued that the field of

instructional design as well as online learning environments are changing as technology is evolving; therefore, a flexible descriptive quality framework seemed to be what they needed for online course development, which led to the development of the PDPIE framework.

## **PDPIE Quality Framework**

The framework consists of five sections; each section covers one of the five phases of the course development cycle: planning, design, production, implementation and evaluation. In the online resource in which the framework is presented in detail, each phase starts with an overview, a descriptive image, and a list of tasks suggested to be performed by an instructional designer within that phase. The resource is based on team approach course development; however, there are instructions for lone ranger approach as well (for those instructors who do not have any resources or support to develop their online course). The resource is flexible in the sense that it is accessible online and is licensed under creative commons. Those who decide to adapt it should be able to customize and update it regularly. The resource was developed in Wiki so that the content can easily be transferred to a website, a Learning Management System, or a course. It is also user friendly and easy to update.

### ***Inspired by Analysis, Design, Develop, Implement, Evaluation (ADDIE) Model***

PDPIE phases are close to the hybrid design model proposed by Passerini and Gragner (2000), which also has five phases – analysis, design, development, evaluation, and delivery. The phases in this framework consist of planning, development/design, production, implementation and evaluation. PDPIE share many qualities with ADDIE model. The first phase of the PDPIE calls for conducting a needs analysis, which covers learners' characteristics, context, and instructional goals. In the second phase, the main content and instructional strategies are determined and developed. In the production phase, the content is developed fully online. The implementation covers instructors' training, delivery, learners' support and resources. Finally, the last phase covers evaluation in both formative and summative formats. Figure 1 demonstrates PDPIE Quality Framework at a glance. All the phases are presented and discussed in following sections.



Figure 1. PDPIE Quality Framework

### ***Planning phase***

The first section of PDPIE framework covers the quality/essential tasks that need to be done in the course development planning phase. The major tasks in planning include assess needs, define project scope, determine resources, create a project schedule, and determine budget. This phase includes conducting a needs analysis, which covers analysis of learners' characteristics, context, as well as instructional problems and instructional goals. Many educators in the field support the importance of needs analysis for the design of syllabus and course design (Gomez Garcia, 2007; Pilar & Mayo, 2000; Hutchinson & Walters, 1987). During this phase (and in a team-based approach), the roles and responsibilities of the team members as well as involvement of a reviewer and students should be discussed and confirmed. The course author/instructor is also encouraged to work with a project manager/instructional designer to outline key objectives, teaching methodologies, planning details, schedules, and goals, much of which will be collected via the course planning document that is presented at <http://wiki.ubc.ca/Sandbox:Course Planning>.

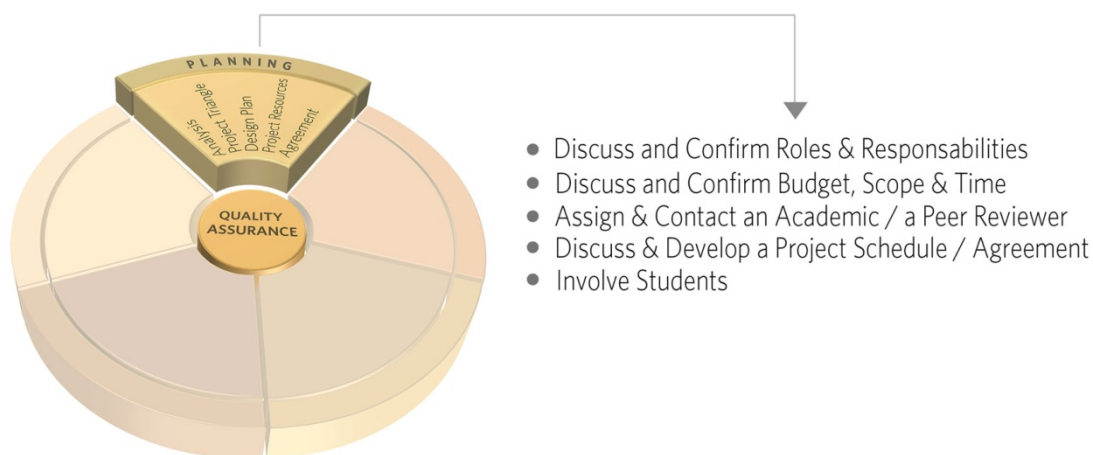


Figure 2. Planning Phase and Key Elements/Tasks for Quality

### ***Design and development phase***

The design and development phase (see Figure 3) is characterized by the author creating and writing the course content. At this stage, it is recommended that the course author look at one quality assurance guideline as a reference while developing the content. This might be a guideline that is developed in house or one is that is developed externally. A Guide to Quality in Online Learning, from Academic Partnership (2013), is a valuable resource that lists many of these guidelines. The objectives, scope, a sample lesson, and other sections from the course-planning document can also be helpful at this stage. It is important to discuss copyright and use of open resources. For content and additional learning materials, it is also very important to involve institutions' librarians. Discuss the outcomes and different assessment strategies that help learners to achieve those outcomes. In this stage, the course author needs to work closely with an instructional designer, reviewer or a colleague in the field to review, modify and improve the content.

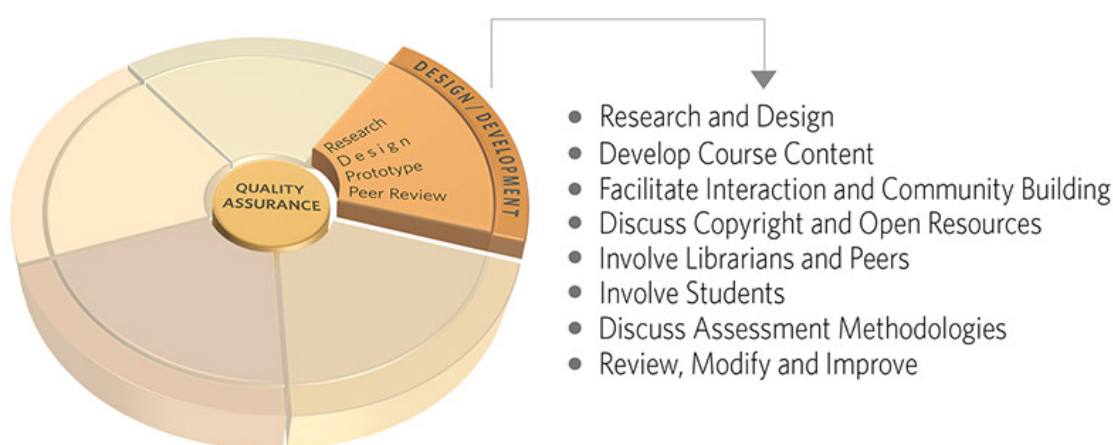


Figure 3. Design and Development Phase and Key Elements/Tasks for Quality

## ***Production phase***

In this phase course content is finalized and handed over to the production team to be developed fully online. The instructional designer needs to discuss and work with the team members to ensure W3C standards are followed for accessibility purposes. For example, the course programmer needs to add alternative text (ALT) for all the images that are provided by the course author. She/he needs to make the navigation consistent and use we-safe colours in the course. This ensures students with disability can access the course with ease. It is also important to ensure that tools and media used in the course support the course learning objectives. When developing course materials online, breaking them into small, and manageable modules, increases learners' awareness of the conceptual structure of each module and also allows for greater flexibility in pacing their learning (Johnson & Aragon, 2003). Figure 4 demonstrates the production phase and the key tasks that need to be complete at this phase for quality design.

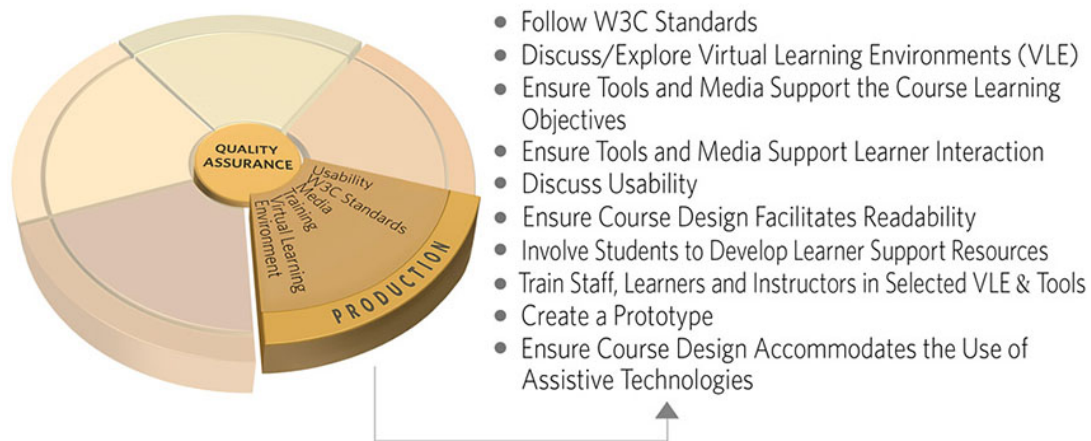


Figure 4. Production Phase and Key Elements/Tasks for Quality

## ***Implementation phase***

This phase comprises the course offering and teaching process (see Figure 5). At this stage, all the course components have been thoroughly reviewed online and the instructor should have been trained in the learning management system (i.e. Blackboard, Moodle) to feel comfortable in the learning environment. The instructor should strive to create a learning community by his/her presence, encourage critical thinking and promote active learning (Caplan, 2004). The instructional designer needs to ensure that a welcome email/letter is sent to students registered in the course prior to the course start date to begin building the learning community. The instructional designer needs to ensure faculty support is provided through mentorship, and technical support. It is also important to ensure learners have full access to technical, and academic support.

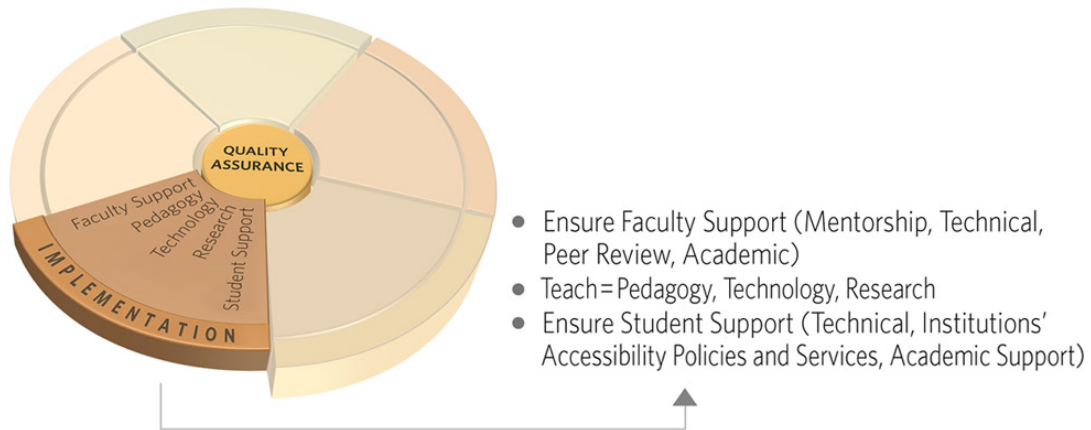


Figure 5. Implementation Phase and Key Elements/Tasks for Quality

### **Evaluation phase**

The evaluation phase generally takes place once the first offering of the course has successfully come to an end. To prepare the course for its next offering, the course development team meet again to evaluate the course based on student evaluations, peer feedback, instructor’s notes/reflection and the team feedback. Figure 6 demonstrates the evaluation phase and the key task that need to be completed during this phase.

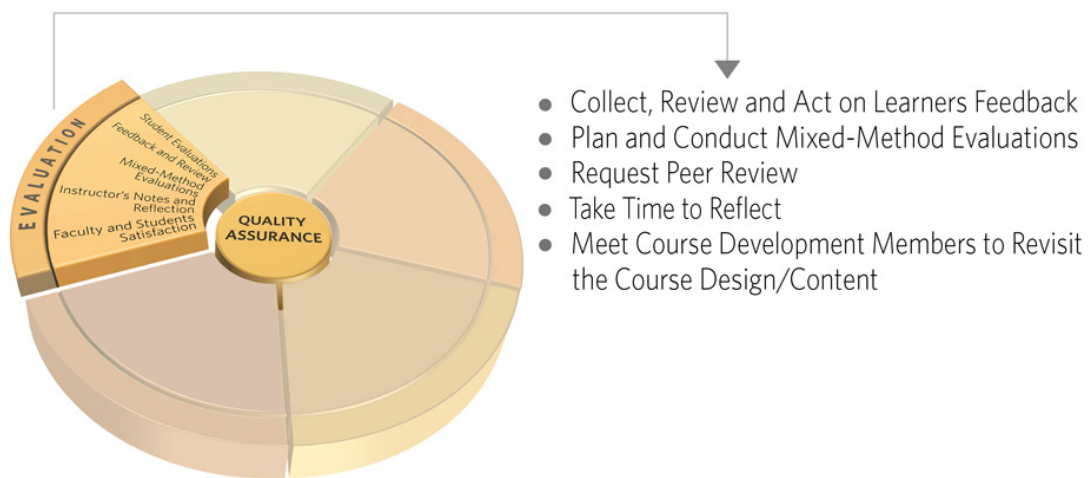


Figure 6. Evaluation Phase and Key Elements/Tasks for Quality

### **Conclusion**

PDPIE Framework is a quality online course development framework. It is based on a team approach; however, the resource has been developed in a way that even instructors who do not have a team can also use it to improve quality in their work. In each phase, the roles and required tasks are discussed and different guidelines, and checklists are developed and shared. The terms and steps are explained in detail to avoid misinterpretations. Supporting documents developed for each phase include templates, samples and guided questions that help designers and instructors to do their jobs more efficiently with the timeline given. The resource has been accessed by 1364 individuals so far and has been used in different

universities in Spain, Canada and Australia. One goal for the development of this resource is to get instructional designers one step closer to a quality design; the second goal is to provide a resource that can be modified and improved as the field and technology changes.

## References

1. Academic Partnership (2013). *A guide to quality in online learning*. Retrieved September 2013 from <http://contactnorth.ca/tips-tools/guide-quality-online-learning>
2. Barker, K. (2001). *Creating quality guidelines for online education and training*. Retrieved September 2012 from <http://futured.com/form/pdf/english.pdf>
3. Beck, S. (1997). *Evaluation criteria: The good, the bad, & the ugly: or why it's a good idea to evaluate web resources*. Institute for Technology-Assisted Learning, New Mexico State University. Retrieved June 2012 from <http://lib.nmsu.edu/instruction/eval.html>
4. Caplan, D. (2004). *The development of online courses*. Athabasca University. Retrieved June 2013 from [http://cde.athabascau.ca/online\\_book/ch7.html](http://cde.athabascau.ca/online_book/ch7.html)
5. Gomez Garcia, L. (2007). *The importance of needs analysis in syllabus and course design. The CMC-E project: a case in point*. Retrieved August 2012 from <http://www.spertus.es/Publications/Lidia/valladolid.pdf>
6. Herrington, A.; Herrington, J.; Oliver, R.; Stoney, S. and Willis, J. (2001). Quality guidelines for online courses. The development of an instrument to audit online units. In G. Kennedy, M. Keppell, C. McNaught & T. Petrovic (eds.), *Meeting at the Crossroads. Proceedings of the 18th Annual Conference of the Australian Society for Computers in Learning in Tertiary Education*, (pp. 263-270). Melbourne: Biomedical Multimedia Unit, The University of Melbourne. Retrieved September 2013 from <http://www.ascilite.org/conferences/melbourne01/pdf/papers/herringtona.pdf>
7. Hutchinson, T. and Waters, A. (eds.) (1987). *Need analysis. English for specific purposes*. Cambridge: Cambridge University Press (pp. 53-64)
8. Johnson, S.D. and Aragon, S.R. (2003). An instructional strategy framework for online learning environments. In *New Directions for Adult and Continuing Education, 2003(100)*, (pp. 31-43).
9. Passerini, K. and Granger, M.J. (2000) A development model for distance learning using the Internet. In *Computers & Education, 34(1)*, (pp. 1-15).
10. Pilar, M. and Mayo, G. (2000). *English for specific purposes: Discourse analysis and course design*. Bilbao: Servicio Editorial. Universidad del Pais Vasco/Euskal Herriko Unibertsitatea (pp. 37-39)
11. Sharif, A. (2014). *Quality of Online Courses*. Retrieved 2015 from <http://www.tdx.cat/bitstream/handle/10803/277385/AfsanehSharifThesis.pdf?sequence=1>