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Subject Matter Expert (SME) Onboarding 101:
Improving Development Efficiency and Course Quality Through SME Training

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Abstract

A common challenge for instructional designers and administrators of online programs is ensuring that projects are completed within the development timeframe and that course content meets high standards for quality. This paper describes a training course that was developed to meet those challenges. The course prepares Subject Matter Experts (SMEs) to work with a design team made up of instructional designers and instructional technologists so that SMEs can plan their course content using a backward design framework. SMEs participate in a fully asynchronous online course with other SMEs where they can collaborate and brainstorm ideas. Having SMEs take an online course that resembles the online course they will later be designing allows them to gain insight from a learner perspective which can help them design a learner-centered course. As a result, this training program has improved the course development process to help the university meet its goals for quality online learning.

Key words: SME training, instructional design, online course design, SME onboarding, online program management

Introduction

The following presents a case study where a university's instructional design department developed a training course to onboard new Subject Matter Experts (SMEs) to working with the instructional design team to develop online courses. When reviewing the literature on university course design training programs, there were few examples that provided detailed descriptions of the structure and content of training courses that are specifically tailored for SMEs. This paper presents a comprehensive description of a training course that was developed to onboard SMEs and the results and impact of the training which may be helpful to teams or institutions looking to implement similar training programs for online course development.

Background of the Problem

The university discussed in this case study is a Roman Catholic institution with about 8,000 on-campus students and approximately 1,000 online students, in which the online programs have expanded in the last five years. The University's Learning Design Center (LDC) supports university initiatives to expand access to an education for students who cannot take courses entirely on campus or within the confines of a fixed semester system through expanded online and hybrid learning by providing comprehensive instructional design services for all new and existing online course development projects. As more online graduate programs were approved for development, meeting the demands for high quality course development within the established timelines that precede term start dates became difficult. Instructional Designers (IDs) were spending a lot of time up front coaching SMEs (Subject Matter Experts) on team processes and expectations for content delivery before actually starting to curate content and design and build courses, oftentimes compressing the work to the end of the project timelines. In order to essentially extend the development period, it was decided that a course/workshop to train the SMEs on LDC processes and quality standards as well as complete the planning phase of their course development could be offered three weeks in advance of the official development cycle start date.

Proposed Solution: Subject Matter Expert (SME) Training Course

To address the problems stated above, a course was developed called LDC-101: LDC Course Design Fundamentals to onboard SMEs to the course design process and help them generate a plan for their course before the development cycle officially started. This two-week asynchronous online course resembles a course that students take and introduces SMEs to Backward Design, a framework that focuses on student learning outcomes rather than subject content coverage. The course consists of seven modules (just like the courses students take) where a module corresponds to a step in the backward design process. Each module has readings, interactive presentations, course planning activities, and peer learning activities to brainstorm ideas with other SMEs in the course. By the end of the course, SMEs submit a proposed course outline called an Online Course Planning Grid (OCPG) (Appendix 1) and a Cumulative Assessment/Course Project Worksheet (Appendix 2) that they receive feedback on from the course facilitator before they meet with their instructional designer for the development kick-off meeting. This is the description of the course:

LDC-101 is a workshop that provides Subject Matter Experts (SMEs) skills and knowledge about USD's course design process, technologies for course design and introduces the University's course quality standards. It will orient SMEs to the 17-week online course development process used by the Learning Design Center team. SMEs will be introduced to the roles, processes, and design framework that they will use during course development. By the end of the course, SMEs will have completed the Online Course Planning Grid (OCPG) and the Cumulative Assessment Worksheet which they will use to consult with their assigned Instructional Designer to initiate the course design process. This two-week online course is fully delivered in Blackboard and is facilitated by an instructional designer. The course has several asynchronous peer learning activities and a final project deadline. There is one synchronous session (recorded and optional)

on Day 1 of the course that will provide an overview of the course structure (Leslie & Lizardo, 2021).

The learning outcomes for the course are:

- Identify the roles and responsibilities that make up the course design team and effective team behavior.
- Generate ideas for your course using the Backward Design framework.
- Create an overall plan for your course using the Online Course Planning Grid (OCPG) template.
- Discuss how your course meets the University's mission, values, and quality standards (Leslie & Lizardo, 2021).

Course Overview

The course begins with a Getting Started page that includes the course description, learning outcomes, syllabus, and bios of the course facilitators. There is also a discussion board for SMEs to introduce themselves and share their background and passion for their subject matter. They are also invited to reflect on how they can translate that passion to their students. The first module introduces SMEs to the project management component of course design, which comprises the 17-week course development process, the roles and responsibilities that make up the course design team, as well as what makes a team successful. In this module, SMEs create learner personas for two fictional students who will be taking their course. SMEs then use these personas as a point of reference when planning their course in the subsequent module activities. This module has media presentations on working with the Learning Design Center (LDC) and the course development process. This module also includes readings from an Online Course Development Guide authored by the LDC and some online articles on how to create learner personas. SMEs submit their Learner Personas to a discussion board and are invited to provide a brief explanation of how they plan to design their course to meet the needs of each of their learners. For the course planning activity, SMEs begin filling out their Online Course Planning Grid by entering in some basic course information such as the course description and any required textbooks.

In the second module, SMEs are introduced to the first phase of the Backward Design process: writing measurable learning outcomes using Bloom's taxonomy verbs. They are also introduced to the concept of alignment. There is a presentation on Backward Design and a presentation on writing learning outcomes. There are readings and a short video on how to write learning outcomes and a knowledge check quiz on writing learning outcomes. In this module, SMEs begin crafting their learning outcomes at the course and module level. They share their learning outcomes in a discussion board with peers and are encouraged to give their peers feedback. Finally, SMEs engage in a course planning activity where they continue to add to their Online Course Planning Grid (OCPG) by adding their course learning outcomes, module titles, module topics, and module learning outcomes.

In the third module, SMEs are introduced to the next phase of the Backward Design process: Designing assessments to capture evidence of student achievement of the learning outcomes. There are presentations on summative and formative assessments and readings and a video on authentic assessments. In this module, SMEs plan their course's cumulative assessment/final project using a template and share their ideas with their peers in a blog post using the Blackboard blog tool. For the course planning activity, SMEs continue adding to their Online Course Planning Grid (OCPG) any assessment ideas they have as well as a brief description of their cumulative assessment/final project.

In the fourth module, SMEs are introduced to the next phase of the Backward Design process: Designing peer learning activities that prepare students to succeed in their assessments that align to the learning outcomes. There is a presentation on peer learning activities and tools available in the LMS to promote peer-to-peer engagement such as discussion boards, groups, blogs, and wikis. There are readings on writing effective discussion prompts and videos on using wikis for collaboration and blogs for peer feedback and discussion. In this module, SMEs generate ideas for peer learning activities and craft a discussion prompt for their course, which they share in a discussion board to get feedback from their fellow SMEs. For the course planning activity, SMEs continue filling out their Online Course Planning Grid (OCPG) by populating it with ideas for peer learning activities such as discussions.

In the fifth module, SMEs learn about the last phase of the Backward Design process: Selecting quality course materials that align to the activities, assessments, and learning outcomes. There is a presentation on instructional content best practices and a checklist for selecting quality course materials. There are also instructions for obtaining textbooks through open source and external online vendors. In this module, faculty are put into groups from their degree program using the Blackboard groups tool. In their group, they share in the discussion board their ideas for instructional content with their group members and post a few examples of materials, such as readings and videos they have curated for their course. For the course planning activity, SMEs continue filling out their Online Course Planning Grid (OCPG) by including titles and links of any instructional materials they may want to include.

In the sixth module, SMEs learn about different types of custom media that can be produced by the LDC's instructional technologists. There is a presentation on custom media asset examples and a presentation on thinking through alignment with media. There is a reading about how to draft lecture presentations. There is a self-assessment to survey SMEs' prior knowledge and experience developing media that includes information in the automatically populated feedback on the survey if SMEs want to learn more. There are also additional resources on some of the University media tools available such as Panopto, Screencast-o-matic, Zoom, Voicethread, and the on-campus Faculty Teaching Studio. In this module, SMEs share ideas for media they think would be a good fit for their course by filling out a Custom Media Asset Proposal Worksheet (Appendix 3) where SMEs need to identify the media type, which learning outcome the media asset aligns to, and describe how the media asset will help students succeed in the assessment(s) for the module. In this worksheet, SMEs also propose a content outline or description of the media and any other details to consider. SMEs post this worksheet in a discussion board and

describe how this media asset will help students succeed in the module or course. There is an optional activity in module 6 for SMEs to submit an audio recording sample if they plan on recording audio as part of their custom media. This assignment is an opportunity for SMEs to test out their audio and recording equipment from home and receive feedback on the quality of the audio recording. For the course planning activity, SMEs continue filling out their Online Course Planning Grid (OCPG) by including any ideas they have for custom media.

In the seventh and final module, SMEs review the University's mission and values as well as the University's Online Course Quality Rubric (Appendix 4) as part of the readings. SMEs finish completing their Online Course Planning Grid and submit it to the discussion board for their peers to view. In their post, SMEs also discuss how their course meets quality standards and the University's mission, values. In the final module, there is a link to an end of course evaluation where SMEs can provide feedback to the facilitators on the course.

Implementation

This SME onboarding course is facilitated three times per year, three weeks prior to each development cycle. Before each course launch, Academic Directors register new SMEs contracted to work with the Learning Design Center through an online registration form. SMEs receive a welcome email informing them of the course timeframe, pacing, workload, and the final deliverable of an Online Course Planning Grid and Cumulative Assessment/Course Project description. SMEs are also invited to an optional 30-minute online orientation Zoom session on the first day of the course that includes a course overview, explanation of the Backward Design framework, the final deliverable and addresses any questions SMEs may have. SMEs have two weeks to complete the course, including the course planning activities that build toward the final deliverable of the Online Course Planning Grid (OCPG). After SMEs submit their Online Course Planning Grid (OCPG), the course facilitator provides feedback and sends it back to the SME in an email copying the assigned instructional designer and Academic Director prior to the course development kick-off meeting. To date, the course has been facilitated 7 times and 47 SMEs have completed the course. SMEs generally spend a maximum of 20 hours completing this course as part of their contract and are compensated for their time.

Results

After the course ends, SMEs are invited to fill out a survey to gather feedback on the effectiveness of the course. Survey responses indicate that many SMEs found the Backward Design framework, planning activities, and peer learning activities helpful in preparing for the course development cycle. Some SMEs stated that they thought the two-week timeframe to complete the course was not sufficient and that they needed more time to go through the course. IDs were surveyed after their kick-off meeting to gather information on SME readiness to design quality online courses. IDs were also surveyed after the development cycle ends to discuss their experience working with their SME and lessons learned. Results from the surveys indicated that

SMEs who took LDC-101 were better prepared going into the course development process than those who did not take the course. In addition, those who did take the course worked more effectively during the development process and, overall, had better communication, understood the expectations for their work, and produced better quality content than SMEs who did not take the training. Because SMEs were better prepared and worked more effectively during the course development cycle, this improved the efficiency for both instructional designers and SMEs, which resulted in more courses being completed on time than before LDC-101 was implemented.

Areas for Further Development

Each cohort of SMEs is sent an end of course survey, which has helped identify several opportunities for improvement. One recurring theme was that some SMEs felt they did not have enough time to complete the course. To address that concern, FAQs were created to better communicate the time commitment for participating in the course to help SMEs make arrangements and set aside adequate time to successfully complete the course. Some of the materials were pared down as well to accommodate SME's time constraints. The course was also made available to SMEs the Friday before the official course launch date in case some SMEs wanted to use an additional weekend to get a head start. Plans to improve the course also include integrating training on using Google Docs and Google Drive since all the course development is done in Google docs during the development cycle. SMEs should be introduced to the process of working in Google Docs during the onboarding course to help them have a smoother transition to working in them during the development cycle. This will also allow SMEs to submit their Online Course Planning Grids-in-process using Google Docs so they can receive feedback module-by-module if they like, instead of waiting until the end of the course.

Conclusion

A common challenge for instructional designers and administrators of online programs is ensuring that courses are completed within the development timeframe while also meeting standards for quality. To address this challenge, a course was created for SMEs to take that introduced them to the processes and frameworks used to design high quality courses as well as the expectations for delivery of content. Survey results indicate that SMEs who took the course were much more successful in the course development process with instructional designers than those who did not take it. Those who take it can more easily “hit the ground running” and focus on content delivery than having to spend time on training during the development cycle. This impacted the overall efficiency of the course development team so that more courses were completed on time after SMEs went through the training course. Instructional design teams at other institutions who experience the challenge of meeting deadlines and quality standards may find that having SMEs go through training prior to beginning course development can improve efficiency and quality. The training course described above may provide some ideas for those looking to design such a course.

References

Leslie, H., & Lizardo, A. (2021). *LDC-101 course description*. [Syllabus]. Blackboard.

Leslie, H., & Lizardo, A. (2021). LDC-101 course learning outcomes. [Syllabus]. Blackboard.

Appendix 1: Online Course Planning Grid (OCPG)

Online Course Planning Grid

This document will outline the structure of the course and serve as a reference during the design of each learning module. Work with your instructional designer to complete this document. The course plan must be approved by the Program Director/Coordinator before development can proceed.

Course Information

Course Number/Name:	Subject Matter Expert: Email:	Program Director: Email:
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Program Learning Outcomes:
1.

Course Description:

Course Learning Outcomes:
1. _____ (PLO #)
2. _____ (PLO #)

Required Textbooks:

Brief Description of the Cumulative Final Assessment:

Online Course Planning Grid - New Course

Use this table for planning a new course. Before you begin, consult with the Program Academic Director about any general recommendations they may have for the course. Final approval of the Course Planning Grid by the Academic Director will be requested at the conclusion of LDC-101.

Module Titles, Topics and MLOs (Required)			Ideas for Readings/Custom Media Assets/Required Media/Discussions/Activities/Assignments (Optional)		
Module #/Title	Topic(s)	Module Learning Outcomes (Consider CLO alignment)	Readings/Custom Media Assets/Required Media	Discussions	Assignments/Activities
<p>Example: Module 1: Survey of Leadership Theory</p>	<p>Example:</p> <ul style="list-style-type: none"> • Servant Leaders • Situational Leadership • Leader vs. Follower 	<p>Example:</p> <ol style="list-style-type: none"> 1. Describe servant leadership in practice. (CLO #) 2. Identify appropriate theory that best fits organizational needs. (CLO #, #) 	<p>Example:</p> <ul style="list-style-type: none"> • Chapter 1 (MLO #1, MLO #2) • Article (MLO #2) • Ted Talk (with link) (MLO #1) • Podcast interview (MLO #1) 	<p>Example:</p> <ul style="list-style-type: none"> • Provide 3 examples of servant leaders from your own experience or from news articles (MLO #1) 	<p>Example:</p> <ul style="list-style-type: none"> • Essay • Reflection • Lesson Plan <p>Create a 5 min presentation to profile an organization and its leadership needs based on the theories found in the course readings and outside sources (MLO #2)</p>
Module 1:					
Module 2:					
Module 3:					
Module 4:					
Module 5:					
Module 6:					
Module 7:					

Course Project/Cumulative Assessment

(Typically Due in Module 7)

Course CLOs

1. [Outcome One: begin with [Bloom's Taxonomy verb](#), only one verb per outcome]
2. [Outcome One: begin with Bloom's Taxonomy verb, only one verb per outcome]
3. [Outcome One: begin with Bloom's Taxonomy verb, only one verb per outcome]

[Title of Assignment] [CLOs: #, #].

[The Cumulative Assessment measures students' mastery of the Course Learning Outcomes (CLOs). When creating the instructions for this final project, ensure that what will be developed by the student is a demonstration of the CLOs. Some examples of student deliverable formats include:

- PowerPoint and/or video presentation
- Curriculum unit design
- Research paper
- White paper/briefing/executive summary
- Proposal/planning framework/policy document
- Collection of Portfolio artifacts
- Group project

[Introduction (Why) – provide a short description of why this assignment is important or applicable to the students' professional context. How is it connected to the course learning outcomes? Include instructions to read/watch/review any specific required resources that students may need to focus on prior to beginning work on this assignment.]

[Instructions (What) – Explain what you would like students to provide in the assignment so that students clearly understand what is expected of them. What type of resources do you require students to consult (e.g., peer reviewed or recent publications) and how many? Assignment instructions should be written with clearly stated directives and include all the requirements and expectations using some higher level [measurable and observable verbs](#).]

[Format (How) – Outline the deliverable type (Word Doc, PowerPoint or other type of presentation, Audio file, etc.). Also indicate details such as the word count or number of pages, slides, or minutes and any requirements for resource citation.]

Assignment Scoring Rubric

Your instructional designer will work with you to develop the scoring rubric for your final project. When thinking about your rubric, consider what elements of the prompt students should be assessed upon. What elements of the project address learning outcomes of the course? Include these in both the assignment prompt and the rubric.

Criteria	Achievement Level Meets or Exceeds Expectations 80 – 100%	Achievement Level Approaches Expectations 70 – 79.99%	Achievement Level Below Expectations 69.99% or Less
Insert grading criterion 1 (Refer to assignment instructions) Weight %	Description of a good to excellent performance	Description of a fair to average performance	Description of a poor quality or non-performance
Insert grading criterion 2 (Refer to assignment instructions) Weight %			

Appendix 3: Custom Media Asset Proposal Worksheet

Custom Media Asset Proposal Worksheet

Directions: Use this worksheet to brainstorm the type of custom media asset, Module Learning Outcome alignment and additional details. Sample information/guiding questions are listed in gray and can be deleted when you enter your own information. It's possible that you may not have all the details articulated for your custom media, and that's ok, this is meant to help you start thinking ahead.

Media Asset Type *Spotlight interview*

With which MLO does this asset align?	<i>MLO 1: Evaluate the merging laws and regulation is that are relevant to builders of Artificial Intelligence. MLO 2: discuss the shortcomings of the status quo for collecting consent to collect store and use data.</i>
How this media asset will help your students succeed in the assessment(s) for this module?	<i>How does this media asset integrate with the other activities in the module? What purpose does it serve? This will really enhance the student experience because students get to hear from another subject matter expert. They can incorporate some of the key questions in their research project.</i>
Proposed Content Outline/Description	<i>Key Questions to Ask in Interview:</i> <ul style="list-style-type: none"><i>• What laws have recently been passed to regulate AI?</i><i>• What are some potential blind spots in current regulation?</i>
Additional Details to Consider	<ul style="list-style-type: none"><i>• Discuss this idea with ID immediately</i><i>• Since this interview will align with MLOs in Module 4, reach out to Jared Malin as soon as I discuss this with ID.</i><i>• Use Zoom for interview</i>

Appendix 4: Online Course Quality Rubric

Online Course Quality Rubric

Culture of Engagement - <i>The University is focused on engaged teaching with extensive interpersonal interaction, high impact teaching practices and pedagogical strategies that emphasize collaboration, mentoring and the co-creation of learning.</i>		Sufficiently Met	Minor Revision	Not Sufficient
1. COURSE ACTIVITIES				
1.1	Learning activities promote the achievement of student learning outcomes.			
1.2	Learning activities allow for interaction with course materials and peer-to-peer learning opportunities.			
1.3	Learning activities provide opportunities for self-direction and self-regulation of learning.			
2. LEARNING ASSESSMENTS				
2.1	Assessments measure achievement of the stated learning objectives.			
2.2	A variety of assessment types are present throughout the course.			
2.3	Appropriate methods and procedures are used to assess students' mastery of content.			
2.4	Where possible, assessments provide students with a variety of ways to demonstrate achievement of learning outcomes.			
2.5	Assessments provide students with opportunities that inspire ownership of learning.			
3. COLLABORATION				
3.1	Collaboration activities promote critical reflection and higher order thinking aligned with learning outcomes.			
3.2	Expectations and evaluation criteria for the quality of communication/collaboration are present and clearly defined.			
3.3	Collaboration activities build fluencies in professional communication.			
3.4	Collaboration opportunities promote the co-creation of knowledge through the sharing of student learning experiences.			
Care for the Whole Person - <i>Education at the University emphasizes each student's holistic development. The goal is to teach subject matter while</i>				

<i>nurturing the success and development of the whole person. Robust support is provided, including orientation, academic and career advising and individual guidance.</i>				
4. COURSE DESIGN				
4.1	Course navigation is intuitive and utilizes the course management system appropriately.			
4.2	Course content has consistent labeling and is available for access in multiple media (mobile, offline, assistive technologies, etc.)			
4.3	Digital media facilitate accessibility of content.			
4.4	Support resources for faculty and students are provided for all technology integrated into the Learning Management System.			
4.5	Course includes opportunities for students to apply professional and personal knowledge or experience in relation to the subject matter.			
5. COURSE EXPECTATIONS				
5.1	Technical skills and technology requirements are clearly stated, and instructions for proper use are provided.			
5.2	Institutional policies and support services are provided in all relevant areas of the course.			
5.3	Course and Instructor policies are clearly stated in the syllabus and relevant areas of the course.			
5.3	Course policies are clearly stated, including, but not limited to, instructor response time, student engagement expectations, assignment deadlines and requirements.			
6. INSTRUCTIONAL CONTENT				
6.1	Instructional content supports the achievement of the stated course or module learning outcomes.			
6.2	The purpose of the instructional content and how it applies to the stated learning outcomes is clearly explained.			
6.3	Instructional content engages prior learning experience and bridges cross-curricular concepts.			
6.4	Instructional content is presented in manageable segments.			
Social Justice - <i>A commitment to social justice is at the heart of the University's mission. Each program expresses this commitment in various</i>				

	<i>ways, including opportunities for students to operationalize social justice throughout the courses.</i>			
7. LEARNING OUTCOMES				
7.1	Course and program learning outcomes are clearly defined, measurable and easily located within the course.			
7.2	Specific descriptive criteria for the evaluation of learner assessments are clearly articulated in the syllabus and assignment descriptions.			
7.3	Learning outcomes are suited to the audience and the level of the course.			
8. LEARNING COMMUNITY				
8.1	Activities and communications are designed to promote a professional learning community.			
8.2	Course activities develop professional skills, teamwork, cooperation and consensus building.			
8.3	Guidelines and student expectations for peer interactions are provided.			
8.4	Collaboration opportunities promote the co-construction of knowledge through the sharing of student learning experiences.			
	<i>Diversity and Inclusion</i> - <i>The University is dedicated to fostering inclusion of a diverse student body as well as the exploration of diversity in content, mechanisms of delivering that content to students, and diverse learning experiences. Our goal is to support students who may have geographical, logistical or financial barriers to traditional education.</i>			
9. ACCESSIBILITY				
9.1	Access instructions and support resources are provided for all required course technologies.			
9.2	Course materials are provided in a variety of formats to meet the needs of diverse learners.			
10. TECHNOLOGY AND MEDIA				
10.1	Course technologies promote engagement and active learning for ease of use.			
10.2	Course technologies are appropriately selected, relevant and			

	integrated.			
10.3	Technology support information is readily available within the course.			