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Development and Implementation of the Maneuver Captains Career Course Learning Ecosystem

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The Maneuver Captains Career Course (MCCC) needed a way to maintain an effective, universally understood system to store, access, and maintain its curriculum. Therefore, a collaborative team consisting of key stakeholders from MCCC and researchers from the United States Army Research Institute for the Behavioral and Social Sciences (ARI) and TiER1, worked together to develop and launch a new knowledge management system. This report describes the front-end analysis used to define the requirements and the iterative process employed to design and develop the MCCC Learning Ecosystem (LE). In addition, the report describes the necessity of a change and communication strategy as well as a governance plan to implement and sustain the LE. Each aspect of the development process is described in detail and appears in the order it was completed. This report was also designed to support United States Army Training and Doctrine Command (TRADOC) instructors, training developers, and program of instruction (POI) managers interested in modernizing their knowledge management system or developing their own version of the LE.

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DEVELOPMENT AND IMPLEMENTATION OF THE MANEUVER CAPTAINS CAREER COURSE LEARNING ECOSYSTEM

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Introduction

In the Army, instructors develop expertise and valuable lessons learned through their teaching experiences at their schoolhouse (Wittig et al., 2023). This expertise is often seen in their creation of class activities and unique approaches to teaching content that supports students' learning. Overall, their expertise is shown in how they determine best practices for teaching the program of instruction (POI) to their students. However, Army instructors will only teach at a specific schoolhouse for a set period of time (i.e., 2-3 years), and their expertise can be lost if there is not a standardized and deliberate approach to document it. The POI remains the same, but the valuable lessons learned on how to best teach the material can be lost with instructor turnover. Therefore, effective knowledge management is essential to limit the loss of expert knowledge. For many organizations, knowledge management can be a large document library such as a shared drive where information is scattered, duplicated, and not always easy to find. With the advances in technology and the increased use of collaborative platforms like Microsoft Teams©, knowledge management can and should be modernized. This report describes the development and implementation of a Learning Ecosystem (LE) for the Command and Tactics Directorate's (CATD) Maneuver Captains Career Course (MCCC) as a way to prevent the loss of expert knowledge and modernize knowledge management.

CATD needed a way for the MCCC to maintain an effective, universally understood system to store, access, and maintain its POI. Therefore, a collaborative team consisting of key stakeholders from MCCC and researchers from the United States Army Research Institute for the Behavioral and Social Sciences (ARI) and TiER1, worked together to develop and launch a new knowledge management system. The purpose of this report is to describe the front-end analysis used to define the requirements and the iterative process to design and develop the MCCC Learning Ecosystem (LE). In addition, this report discusses the necessity of a change and communication strategy as well as a governance plan to implement and sustain the LE. Each aspect of the development process is described in detail and appears in the order it was completed. This report is also intended to serve as a guide for United States Army Training and Doctrine Command (TRADOC) instructors, training developers, and POI managers seeking to modernize their knowledge management system or develop their own version of the LE.

MCCC: Characteristics and Problem Space

MCCC educates roughly 800 active-duty Army, Marine, and Foreign Military students each year with the goal to produce leaders who can be effective company commanders and staff officers who can "win in a complex world" (CATD, 2022)[1]. MCCC consists of approximately 30 instructors, referred to as small group leaders (SGLs), distributed between three teams. An

[1] CATD Leadership provided the MCCC Course Map and Outcomes to the team and can also be found on the MCCC's website: https://www.moore.army.mil/Infantry/199th/CATD/MCCC/Student-Information.html

average SGL will spend less than two years with the organization, which includes their SGL certification (approximately seven weeks). Most SGLs will teach two to three cycles of instruction during that time. A cycle is approximately six months and consists of three phases of instruction: Company Phase, Battalion Phase, and Command Phase. SGLs are expected to be ready to immediately teach all phases of instruction after completing their seven-week certification course (see Wittig et al., 2022 for a description of the certification process). Unfortunately, it is not feasible to teach, or even review the entire POI during the SGL certification program. Therefore, it is imperative for SGLs to have easy access to tools and current versions of POI materials to facilitate lesson planning and preparation.

Additionally, as SGLs gain more teaching experience, they develop unique teaching approaches and overall expertise in teaching the POI to MCCC students. They create new activities or ways to present the material to better engage students based on formal and informal feedback from their students. This valuable knowledge and expertise can be lost with SGL turnover if there are not proper documentation or organizational processes focused on capturing this information. In other words, it can lead to the loss of "tribal knowledge", the information pertaining to a product or service process that resides only in the minds of the employees (Bertain & Sibbald, 2012). The information may reside with one or many employees, and it may vary between employees, but it is undocumented in nature. This can contribute to organizational inefficiencies by creating a cycle of "re-doing" where SGLs start from scratch instead of building upon prior best practices. Several mechanisms were developed within the MCCC to help mitigate this loss, such as the Module Working Groups (MWG), informal SGL collaboration, and Team Train-Ups (see Table 1 for a description of key MCCC Concepts). However, to further prevent this loss, the MCCC needed more deliberate documentation procedures, such as a knowledge management tool to help with capturing, organizing, and managing best practices and other relevant course information.

Table 1

MCCC Concepts

MCCC Concept	Description
SGL	MCCC instructor responsible for instruction, assessment, and additional administrative tasks. They have a personal style for how they approach teaching and modify existing lessons to their style and student needs.
Certification Chief	Certification Chief is a former SGL, who is responsible for teaching SGLs through the certification course.
Team Chief	Team Chief is a former SGL who has typically taught one full cycle of instruction (i.e., Company, Battalion, and Command Phases.) There is one Team Chief per team, and the Team Chief typically does not teach.
CAID	Combined Arms Integration Division (CAID) provides MCoE with combined arms instruction and war fighting functions subject matter experts who assist in the review and development of Maneuver doctrine and maintain liaison with parent branch schools and Combat Training Centers (CTCs).
Chief of Tactics (COT)	COT oversees the MCCC side of the Command and Tactics Directorate (CATD). The COT approves major changes to MCCC lesson content.
Modules	Lessons within MCCC are organized into distinctive blocks of instruction called modules.
Team Train-Ups	Working sessions with SGL teams designed to align SGLs on key module outcomes and updates ahead of teaching a specific module.
Module Working Group (MWG)	MWG is a collaborative session where SGL subject matter experts review and update module content for distribution across MCCC.
SGL- MWG Member	One of two representatives per team sent to a MWG. They are usually a subject matter expert for the content of that module. They are expected to contribute to the discussions on changes to the module.
SGL - Module Owner	MWG member overseeing a particular working group. They are accountable for scheduling and keeping MWG members aligned and on track. They maintain a peer relationship with the MWG cohort and help the MWG agree on changes to lesson content. They brief the COT for approval on the suggested curriculum changes.

Before the LE, the POI and instructional tools were distributed across a shared drive with no formal governance on organization, management, or tracking of seasoned SGLs' lessons learned. There was also an absence of a digital place to share, send feedback, and collaborate with other SGLs on course material. In addition to these constraints, the MCCC also lacked a well-defined and managed system for storing course content. This left the majority of lesson plan maintenance up to individual teams and SGLs. In execution, this often led to ad hoc lesson plans that were poorly communicated across teams or missed altogether. The organization was missing opportunities to capture changes in doctrine, implement best practices, and apply the Army's

Experiential Learning Model (ELM; see The Army University, *Adult Teaching and Learning User's Guide,* n.d. & U.S. Army Training and Doctrine Command, 2021) to grow as a functioning organization at large. Moreover, the lack of a framework contributed to lack-luster inter-team trust, eroding the efficacy of the little structure which was in place to help maintain the POI. With these challenges in mind, the team worked together to develop and launch a new knowledge management system, the LE.

Learning Ecosystem Overview

CATD required a centralized location for SGLs to access current MCCC content. In addition to the centralized location, CATD required an enforceable governance structure including required standard operating procedures (SOPs) to access and update content as well as general use of the tool that could be easily communicated across the organization. The team created the MCCC LE, a digital collaboration environment developed within the Microsoft 365© suite of cloud-based software applications. Its purpose is to help SGLs quickly prepare and teach lessons consistently and effectively. Specifically, the LE was designed to solve the following overarching institutional challenges:

- Minimal time to on-board new instructors for their duties.
- Instructors may lack familiarity with course content.
- Students receive inconsistent instruction across teaching teams.
- The same course content is updated by multiple people in multiple locations.
- A culmination of lost trust in teaching resources and team-members' preparedness.

The research team identified these challenges through multiple formal and informal discussions with key CATD stakeholders throughout the front-end analysis. In the subsequent sections we detail the front-end analysis process.

Methods

The team first conducted a detailed front-end analysis to clearly define the problem and potential approaches to improve the knowledge management system. As part of the front-end analysis, the team conducted focus groups and a review of the content and technology to help inform the requirements for designing and developing the new knowledge management system. The LE was then designed and developed based on results of the front-end analysis to ensure relevance, usability, and feasibility. Each step is described below.

Front-End Analysis: Define the Problem and Approach

To define the problem and approach to the modified knowledge management system, the team had informal discussions with CATD leadership through project briefings and brainstorming meetings. Additionally, the team conducted formal focus groups with key CATD stakeholders such as the Certification Chief, Team Chiefs, and CATD Instructors. The focus groups were also a way to collect additional information on current challenges as well as assess the technology and content requirements needed for the new knowledge management system. Twenty individuals participated in the focus groups where they were asked to describe their

current experience with knowledge management, content creation, technology platforms, and the needs of the new system. The focus groups were qualitatively analyzed through conventional content analysis (Hsieh & Shannon, 2005) to examine how the stakeholders defined success, the problem space, and the needs of the new knowledge management system. Results of the informal discussions and focus groups suggested the need for a centralized location for SGLs to access current MCCC content as well as a need for SOPs. Specifically, the new system would need a set of SOPs on how to access and update content and how to communicate and collaborate within the new system. Along with the SOPs, there needed to be a subsequent plan to communicate and enforce those newly established SOPs to align with existing SOPs. Across the focus groups and discussions, stakeholders also articulated conceptually similar definitions for success. Collectively, the stakeholders defined success of the new knowledge management system for the MCCC as:

- MCCC permanent party members (primarily instructors) have a dedicated "sandbox" where they can collaborate to improve current curriculum and a venue to submit updates/improvements to an approving authority (Chief of Tactics).
- MCCC staff and faculty can quickly find all currently approved, version-controlled material (read only) in a centralized, organized, location.
- SGLs understand the approved, version-controlled material is primarily geared toward new SGLs and created by more senior SGLs. SGLs are welcomed and encouraged to download curriculum and edit it to best suit their strengths and teaching styles, so long as everyone is driving their students to the same module/course outcomes.
- Senior SGLs leave their mark on the organization, even after they have moved to a new duty station. The knowledge gained during their tenure, and applicable updates to curriculum aligned with changing doctrine, seamlessly passes hands. Loss of "tribal knowledge" is minimized.
- Finally, and perhaps most importantly, the implemented system has well-organized SOPs which cover governance, responsibilities, and maintenance.

Front-End Analysis: Understand the Context

In addition to defining the problem and the approach, it was important for the team to understand the potential contextual constraints for the LE. A technology assessment and content inventory were conducted to understand the key tasks, mindsets, and benchmarks linked to the process of creating and managing lesson content at the MCCC.

Technology Assessment

The technology assessment focused on identifying current technology platforms, software tools, and devices used within the MCCC technology ecosystem. Opportunities were also identified to streamline and integrate existing technology platforms. The team conducted informal interviews with SGLs, Team Chiefs, and the SGL Certification Chief to create a comprehensive list of technologies and descriptions of their use. Capturing all of the functionality allowed for the team to understand how to create a single tool that would address the current institutional challenges. Based on the technology assessment, the team identified the

platforms (e.g., shared drives, Microsoft tools) and devices (e.g., laptops, personal mobile devices) available for SGLs to use.

Content Inventory

The team also conducted a content inventory to identify and describe the overall body of the content in the MCCC knowledge management system, its organizational structure, and current state. Collaborating closely with the Certification Chief and the MCCC Team Chiefs, this analysis included defining essential content types and their organizational structures. The team determined that the overall body of content consisted of many duplicate large files such as concrete experience videos and there was a lack of consistent labeling and version control. It was also determined that the content was structured within SGL teams' folders and the content shared a few common structural elements, such as Phase/Module/Lesson and identifying the type of content it was (i.e., Lesson Plan Notes, Tactical Decision Exercises, etc.). In general, content was organized by Phase/Module/Lesson.

Focus Groups

The previously mentioned focus groups also helped the team to identify key SGL tasks, mindsets, and benchmarks linked to the process of creating and managing lesson content. From the focus groups, the team gained a better understanding of the needs and challenges for SGLs. The key findings from the conventional content analysis (Hsieh & Shannon, 2005) were as follows:

- All SGLs create and manage module lesson content and search for this content multiple times a day, often spending more than 10 minutes searching.
- Collaboration on content development is essential since SGLs have different levels of teaching experience and unique expertise.
- As experts in their students' needs, SGLs want to preserve their creative freedom and individual approaches to content development.
- Factors influencing SOPs include decisions and working cadence of MWGs as well as SGL team structures and roles.
- Technology challenges were a recurring theme, such as lack of access to YouTube©, unresponsive classroom technology, and a general mistrust of new technology and initiatives.
- SGLs emphasized the high rate of turnover in their role and discussed the need for consistency.

Through the focus groups, the team also determined the key personas and their roles in lesson creation and management at the MCCC (see Table 2). These personas feed into the design and development process, specifically with understanding how specific users would access and use the new knowledge management system.

Table 2

MCCC Personas

Users	Role in Lesson Creation and Management
SGL	MCCC instructor responsible for instruction, assessment, and additional administrative tasks. They have a personal style for how they approach teaching and modify existing lessons to their style and student needs.
SGL - First Teach	SGL, but in their first teach, so they are unfamiliar with content management and established SGL best practices.
SGL - Subject-Matter-Expert	SGL, but with experience that makes them an expert in a given domain (e.g., engineering, aviation, infantry, or armor).
SGL - MWG Member	Is one of two representatives per team sent to a MWG. They are usually a subject matter expert for the content of that module. They are expected to contribute to the discussions on changes to the module.
SGL - Module Owner	MWG member overseeing a particular working group. They are accountable for scheduling and keeping MWG members aligned and on track. They maintain a peer relationship with the MWG cohort and help the MWG agree on changes to lesson content. They brief the COT for approval on the suggested curriculum changes.
Team Chief (Former SGL)	Team Chief is a former SGL who has typically taught one full cycle of instruction (i.e., Company, Battalion, and Command Phases). There is one Team Chief per team, and the Team Chief typically does not teach during a session.
Chief Of Tactics (COT)	COT oversees the MCCC side of CATD. The COT approves major changes to lesson content.

Front-End Analysis Findings: Overall Strategic Insights and Opportunities

Leveraging the findings from the front-end analysis, the team defined the problem, the approach, and created a better understanding of the context. Then, the team identified key strategic insights and opportunities related to the content, technology, and user experience. Table 3 summarizes the key strategic insights.

Table 3

Key Strategic Insights and Opportunities

Domain	Insights and Opportunities
Content	• SGLs largely agree on how best to label and organize content. • MWGs and SGL Team structures offer platforms to develop and enforce governance and SOPs. • There is an opportunity to consolidate divergent content types and storage locations with an integrated system (i.e., Microsoft 365©).
Technology	• Integrated creation and communication platforms (e.g., Microsoft Teams©) allow SGLs to save time and produce higher quality work. • COVID created the catalyst for change. • Microsoft Teams© can be used to create the new knowledge management system.
User Experience	• Technology should enable effective knowledge management, but not inhibit creative collaboration. • The new knowledge management system should enable SGLs to use their individual skills and expertise to suit the needs of their students.

Learning Ecosystem Design and Development

Leveraging the findings from the front-end analysis, the team used the Agile development methodology (Collier, 2011) to develop the LE in Microsoft Teams©. A key to this method is the frequent iteration between designers and representative stakeholders who review visual concepts or prototypes of the training content and tools as they mature. The purpose of the visual prototypes is to demonstrate evolving features and functions of the tool and communicate clearly regarding the evolving vision for the tool. During the development of the LE, this rapid prototyping process allowed for the distributed project team, stakeholders, and subject matter experts (SMEs) to collaborate and iterate on design ideas. Likewise, as the prototype matured, the team conducted incremental formative evaluations with key stakeholders at the MCCC. In an Agile development approach, the iterations included four primary activities as shown in Figure 1:

1. *Planning/Requirements Update*: Examine any new or updated requirements and assign them to an iteration for implementation.
2. *Analysis & Design/Implementation:* Perform the analysis, design, and implementation work for the requirements and tasks assigned to the current iteration.
3. *Testing*: Tests the changes that have been implemented in the current iteration.
4. *Evaluation*: Evaluate the results of testing and document any issues found that need to be fixed in the next iteration.

Figure 1

Agile development approach

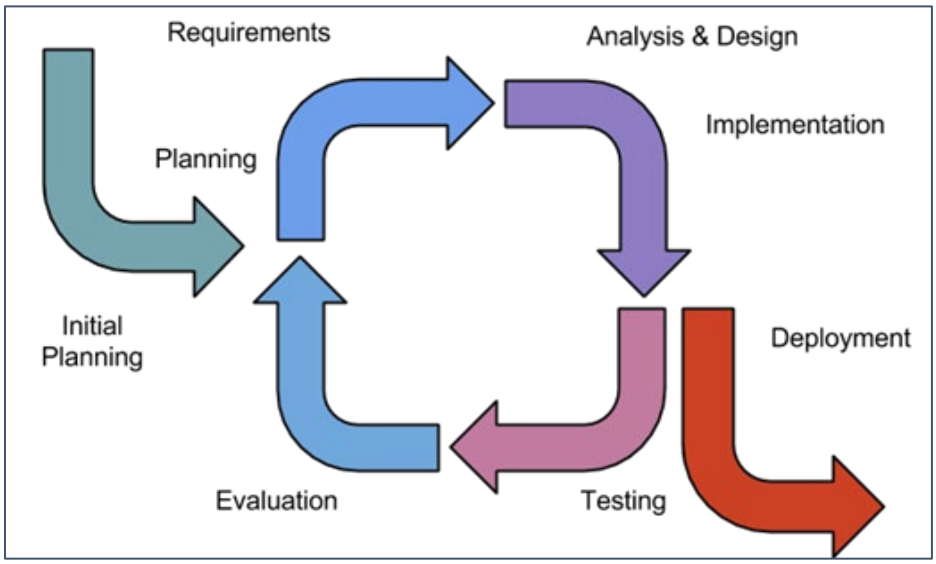
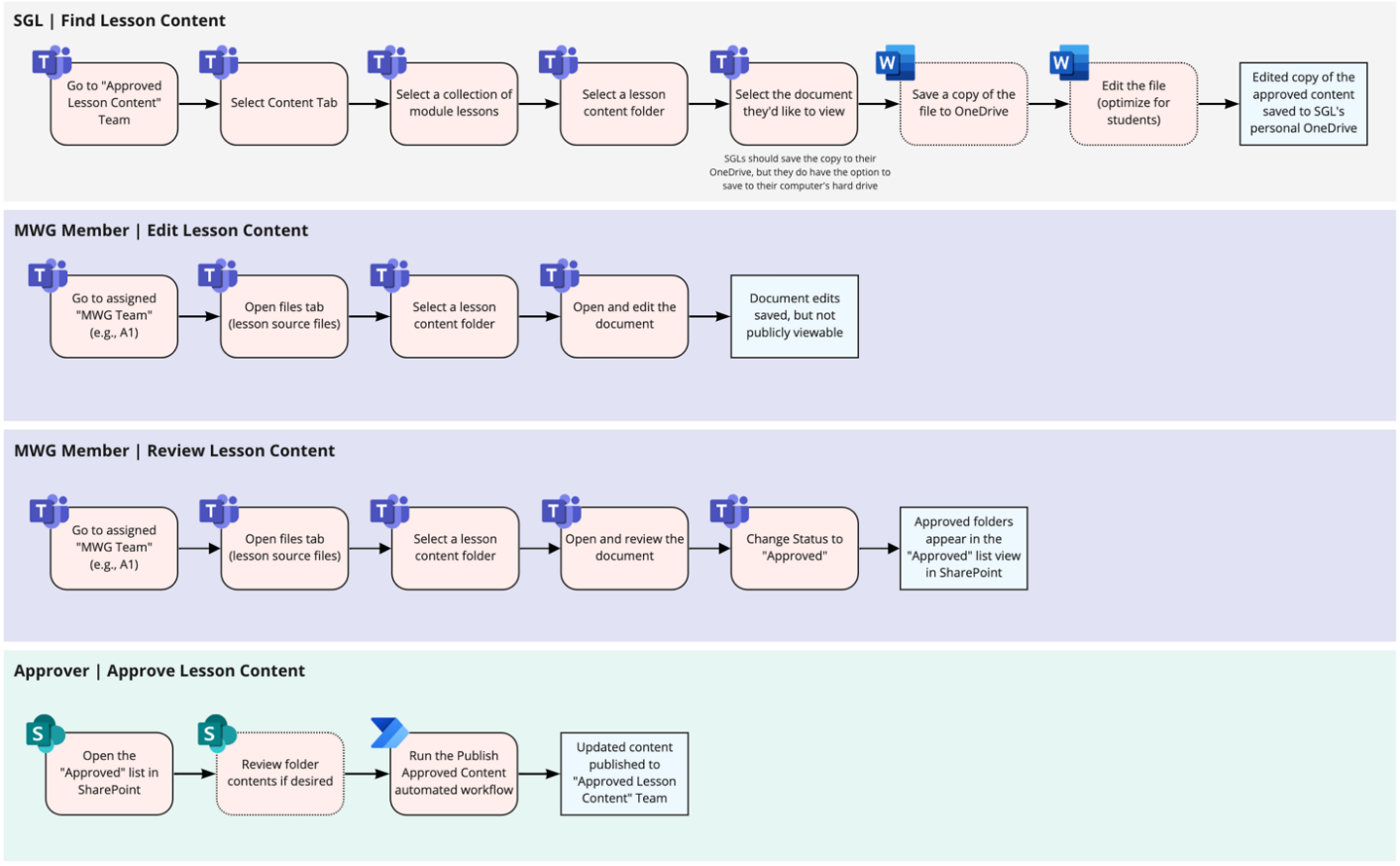


*Figure created by TiER1 Performance

Once the requirements were gathered and the personas were identified, the team developed a user flow diagram for SGLs and the MWG process (see Figure 2 below). These user flows detail the paths the different end users follow to complete a task, a set of tasks, or achieve an end goal using the tool. The different user paths are represented in different colors in Figure 2.

Figure 2

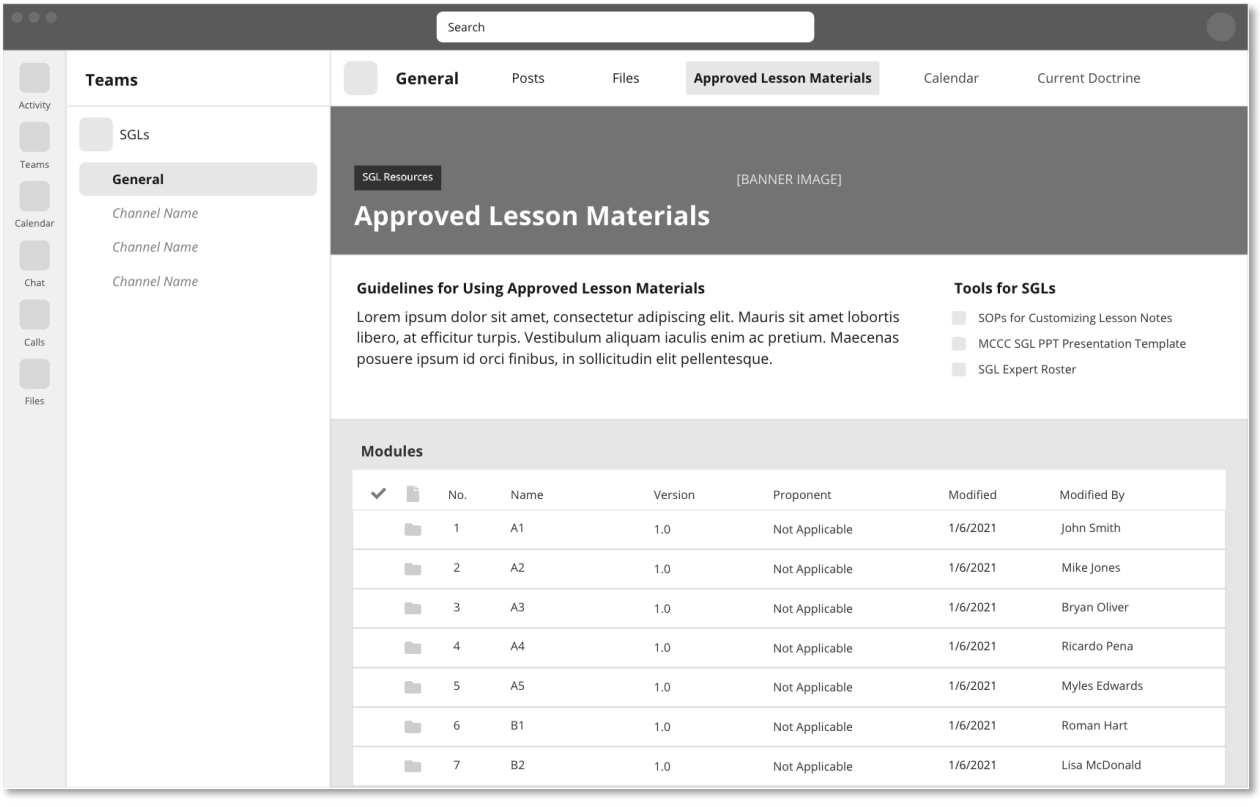
Learning Ecosystem User Flows



The development team worked closely with key MCCC stakeholders and end users to validate the workflow prior to developing the wireframes of the LE. In user interface and user experience design, wireframing is one of the most crucial steps which involves visualizing the skeleton of digital applications. A wireframe is a layout of a product that demonstrates what interface elements will exist on key pages. Wireframes were used to gather feedback on four different draft LE mockups. Using the wireframes, the team collected feedback on how the interface or tool should be designed. The MCCC stakeholders chose the wireframe that looked familiar and believed would be easiest to effectively use (see Figure 3). This wireframe arranged the lessons in class order and was the most intuitive due to the familiar layout. SGLs also liked that they could decide on the folders and number of folders within a lesson. The information collected allowed for the team to develop what the end user would ultimately experience and fed into the development of the prototype and the product. Working with the MCCC stakeholders, the team then took one MCCC course module and moved the necessary content to align with the approved wireframe concept. Specifically, the team cleaned the content library to remove any duplicates and only kept quality content. The final LE images are shown in Appendix A.

Figure 3

Approved Wireframe



Implementation and Sustainment

Any time a new way of working is introduced in an organization, there is risk that the people impacted by the change will resist it and/or will refuse to adopt the new system, process, or way of working (Fournies, 1999). Based upon both research (Mager & Pipe, 1984) and TiER1's experience with fortune 500 companies, there are ways to mitigate that risk and optimize the chances that the new tool, system, and/or ways of working will be adopted. These tactics are to determine champions of the initiative, engage and involve key stakeholders, and make communication a key priority. These tactics – including who to involve and how – are described in the following sections.

Determine Champions for the Initiative

One of the most critical ingredients for the success of a new process, platform, or way of working is to have a champion for the change. The role of senior level champions to support the change is imperative for success. These senior leaders or sponsors must be active and visible in the initiative and have credibility with those they are trying to influence and motivate to embrace the change. They not only promote the value of the change to the impacted audiences, but they also hold an important role in sustaining the change by reinforcing expectations and holding impacted audiences accountable for operating in the newly designed ways.

In the case of the MCCC LE, the sponsor was the Certification Chief who was actively involved in the initiative and committed to creating a new platform to aid the SGLs and the MCCC. Further, the Certification Chief invested time and energy into the effort, another essential component. He offered encouragement to those involved in the initiative and helped them understand its overarching purpose (e.g., "this is how SGLs leave their mark on their organization"). For example, the Certification Chief helped newer SGLs understand that they would be consumers of the LE content as part of their first teach, and once they gained experience, they would be contributors to the content.

Engage and Involve Key Stakeholders

It is well-established that people tend to support what they help create (Higgins et al., 2012). Engaging those who will be impacted by the change by including them on the journey will enhance the likelihood that they will buy-in and adopt the new way of working. Giving the impacted individuals opportunities to offer input, shape the new approach or system, and provide iterative feedback can increase the likelihood that the approach or system will be perceived as valuable and ultimately be used for the intended purpose.

The MCCC LE leveraged this lesson and intentionally involved stakeholders and end users as it was designed and built. For the LE, key stakeholders were identified as the Certification Chief and current Team Chiefs as they would be the main end users and directly impacted by the change. Team Chiefs and other SGLs were engaged at several points in the development process to understand current state challenges, identify needs, and design a platform and SOPs that would meet their collaboration and information-sharing needs.

Organizations interested in embarking on their own initiative to design a LE should seek out similar individuals to the Certification Chief and Team Chiefs. The principle to remember is engage those who will be impacted by the change so that they can "see their fingerprints" on the new system and ways of working.

Make Communication a Priority

Increasing awareness and understanding of the vision for a new tool, set of practices, or way of working is necessary for successful adoption. In fact, the type and quality of communications given to impacted audiences can be a make-or-break factor in success of a change. Strategic messaging and communication (including communicating the "why" and the "what's in it for me?") reduces resistance to change, minimizes uncertainty, informs, and educates those impacted by change, and helps to foster adoption (Berger, 2014). Communication needs to be frequent, consistent, transparent, and leverage multiple communication channels. In addition, people impacted by change generally want to hear why a change is important, as well as the risks of not changing, from the person they report to and/or the senior most leader in their organization (Berger, 2014). This helps legitimize the need for change and sets it as a priority for impacted audiences. For the MCCC LE, communication was intentionally planned so that Team Chiefs and SGLs impacted by the LE knew the rationale behind it, why it was being prioritized, and what to expect over the months of design and development. Table 4 describes the change and communication tasks aligned to the LE development.

Table 4

MCCC Change and Communication Plan

Time	Task	Description	Method
Front-End Analysis	Change Impact Analysis	Assessment of the needs of the organization and how the changes will potentially impact the end users and establishing the "what", "why", and key benefits.	Collected through content reviews and feedback sessions with end users.
	Key Messaging Document (Internal Use)	An internal only document that summarizes the "what", "why", and key benefits of the LE.	Key messaging identified from the findings of the impact analysis.
LE Development	Frequently Asked Questions (FAQs) Document	A living document or location with FAQs and responses for end users.	Populated based on questions posed during meetings with stakeholders and user review sessions.
	Fact Sheet	Visual designed one-page description of what the LE is and why it matters.	Document that can be easily shared and is based on the change impact analysis findings and leveraged content from key messaging document to communicate the "what", "why", and key benefits.
	Progress Briefs	PowerPoint© or Handouts that communicate progress and next steps to key stakeholders.	Leveraged content from key messaging document, fact sheets, and relevant updates from development.
LE Launch	Rollout Announcement/ Communication	Communication for end users that announces the completion of the LE and what to expect for next steps.	Worked with key sponsors to determine best method to communicate (meeting, email, etc.) and drafted the document with key content the users needed to know (release date, functionality, etc.).
	LE Launch Brief	Presentation with key content describing how to use the LE and communicates the key benefits. Presentation given to all available end users.	Drafted based on key messaging document, FAQs, and feedback from key stakeholders.
LE Implementation and Feedback	Adoption Survey and Focus Group	Through analysis of user feedback, assess adoption and identifies recommended next steps or modifications.	Questions delivered after LE is rolled out. Questions tailored to assess adoption/use and used to identify any difficulties users are having (aligns with overall evaluation). Team then analyses results and drafts recommended next steps based on feedback.

Governance Structure

A governance structure is a formal statement of the operating policies and practices needed to help guide the work, ensure control and accountability, and indicate how potential conflicts will be resolved (Berger, 2014). The governance structure for the LE included codifying expectations for SOPs that senior leaders needed to communicate during initial counseling to ensure that expectations were clear. The MCCC LE is designed to support a set of core institutional values. These values are:

- Effective knowledge sharing helps the MCCC SGL community fulfill its mission to prepare Army Captains for future command.
- SGLs' ideas and insights should be made available to the whole SGL community for consideration and possible application.
- All SGLs provide insights into the quality and effectiveness of course documents and teaching techniques both as practitioners and subject matter experts.

In support of these core values, the following SOPs were defined for all SGLs. As members of the SGL community, MCCC SGLs must:

- Access teaching materials from LE document repositories (i.e., a single, read-only location containing updated lesson materials).
- Update published teaching materials by editing the original source documents in a repository accessible by all designated editors.
- Document authors should edit a single shared document using both version control and document history to track changes and prevent data loss.
- Original source documents may be copied, downloaded, and changed by individual SGLs to accommodate students' needs or the instructor's teaching style.
- Create new lesson materials using approved document templates designed specifically for MCCC teaching materials.
- The entire SGL community should be notified when approved MCCC teaching materials are updated and published.

In addition to the values identified above, the team identified three tenants to help understand how the LE would be governed: ease of maintenance, shareholders, and onboarding. These tenants are described below.

Ease of Maintenance

Just as the team focused on ease of use for instructors, the LE needed to be easy to maintain for future site administrators. This meant adhering rigidly to document library construction, creating Microsoft Teams© for content improvement collaboration and for publishing approved products, and avoiding an overly complex permissions structure.

Shareholders

For SGLs, the LE exists for consumption and creation of curriculum. New SGLs generally consume a high degree of content while more experienced SGLs naturally create new content to reach students more effectively, or update materials as doctrine and priorities naturally change over time. Every SGL is assigned to one or more MWGs and is expected to collaborate with their peers to submit recommended changes for approval to the COT. This is a battle rhythm event and is monitored by CATD leadership at each echelon and discussed with instructors during initial and subsequent counseling. The LE SOPs on content modification and communication were integrated into the MWG process and designed to support MWGs.

Onboarding

To ensure the long-term integration and use of the LE, the team recommended that new SGLs were immediately exposed to the LE during onboarding (i.e., instructor certification). The LE has been successfully integrated into the MCCC instructor certification and is used extensively by new SGLs during the certification course. This was a natural result of reorganization but helped introduce new members of the team to a different, and in our view, more suitable approach to collaboration, organization, and standardization of the course material for MCCC. Introducing the LE early on also allows for the SGLs to have access to the required course materials in a more organized way while they are still learning the POI.

Conclusion

Working closely with the MCCC, the LE was created with a detailed front-end analysis which determined the content and technology requirements for the tool. An Agile development methodology was applied, allowing for an iterative feedback approach with user flows, wireframes, and overall development. Throughout the development process, the team created a change and communication plan to help with implementation and sustainment. Essential to the success of the LE was the collaboration and constant feedback cycles with key CATD stakeholders. Other organizations looking to improve and modernize their knowledge management system can use this report to guide their process.

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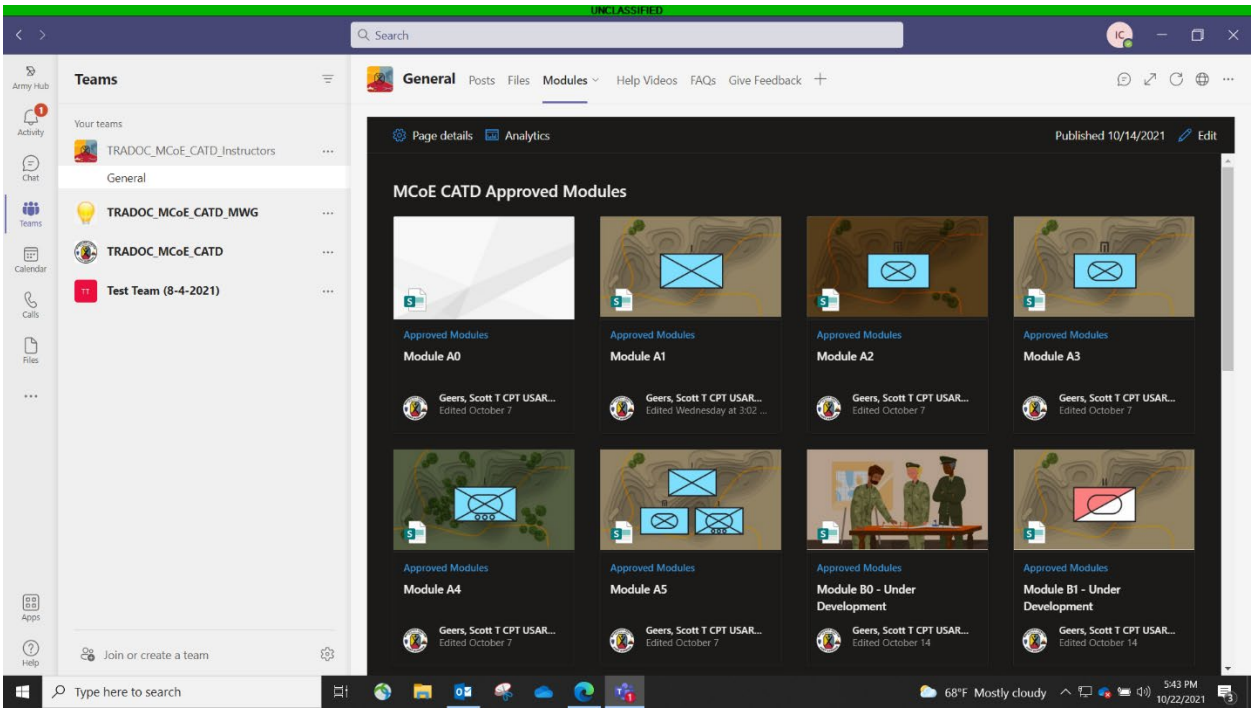
Appendix

Final LE Images

LE Modules Home Page



Example LE Module Structure