

**A Multi-Modal Approach to Synchronous Pre-Work**

**IDE 611 – Collaborative Team Project**

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### **Purpose and Summary**

This project aims to develop an instructional solution for a skill and knowledge problem relating to a student lack of preparation for synchronous learning at the United States Army Sergeants Major Academy (SMA). The curriculum requires students to read 30 to 50 pages per day in preparation for classroom instruction, discussion, and assessments. Students are coming to class with little or no knowledge of the topic for discussion. Students do not appear to learn well from reading outside the classroom. This problem is creating frustration with instructors and poor student performance on assessments.

The proposed instructional solution involves a change in pre-work delivery, from a textual reading format to podcast, video, and weblog formats. The new formats will serve to summarize key points and examples and provide interview content with subject matter experts. The proposed pre-work activities will range in required time commitments, on behalf of the student, between 15-30 minutes. These formats should maximize student time and deliver content in more than one learning style.

Our collaborative project team consists of three members. The team leader is Andy DeUnger. He has over 20 years of experience in leading and managing groups ranging from small teams to large organizations. The other two members, Donny Petrie and Michael Wahl, have more than 20 years of experience working on and leading teams. All three team members have worked on large projects using problem solving models and design theory as part of their Army service.

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## Needs Assessment

### Justification

#### *Current Synchronous Learning Environment*

Students sit behind a horseshoe formation of tables within the classroom, to facilitate discussion. The facilitator's desk sits centered, at the front of the room, inside of the horseshoe. During warmer months, windows remain open as classroom temperatures can become quite uncomfortable, resulting in distraction due to environmental noise from the exterior of the building. All students receive laptop computers and have access to the internet within the classroom. Internet connectivity is unreliable as network speeds experience large fluctuations. Further, many common websites, such as YouTube, are blocked due to government workspace restrictions (Department of the Army, 2019).

Course content, notes, and email platforms remain accessible to students during class. This also allows email to distract many students within the learning environment, hindering participation. The institution uses Blackboard as their Learning Management System (LMS), where each student can access required pre-work materials. Students receive Advance Sheets, which outline pre-work activities. The Advance Sheet contains the learning outcome, a brief overview of the lesson, and readings required to prepare for the next day's classroom discussion (Department of the Army, 2017).

#### *Current Pre-work Learning Environment*

The pre-work environment is unpredictable, as it exists outside of the institution. Many students express frustrations with the amount of required pre-work, especially when coupled with competing family requirements. The pre-work environment is mainly comprised of the student's personal space (i.e. residence). Students do have the ability to access the synchronous learning environment prior to and after synchronous sessions, on a limited basis. Ultimately, there is limited to no control over the pre-work environment.

#### *Current Performance*

Students are failing to complete the required pre-work readings prior to synchronous sessions. As a result, students are arriving to the classroom with little or no knowledge of the topic for discussion. This lack of preparation ultimately leads to lower than expected levels of classroom interaction during lecture and discussion periods and a marked decrease in the effectiveness of the synchronous learning environment. Students are subsequently performing poorly on assessments, exams, and evaluations based on both pre-work and synchronous classroom content.

### Context

Upon analysis and determination amongst the team of what defines a competent SMC student, the team came to several unanimous conclusions. The knowledge of the competent student includes a demonstrated understanding of the content, key points, and key terminology.

Competent students are proficient enough to reflect on and apply the content to their own personal experiences and to discuss those key points, terms, and experiences with their peers. The skills of the competent student includes the ability to use a LMS, basic study skills, the ability to communicate thoughts to other students, and to demonstrate acquired knowledge during assessments, exams, and evaluations.

Further, competent students complete the assigned pre-work and arrive prepared for classroom discussions and activities where they engage in meaningful classroom discussion and are able to connect new material to previous experiences. Ultimately, a display of competency amongst SMC students, through the combined and proper utilization of pre-work and class preparation, results in 100% of students achieving 90% or better on their first attempt at an assessment, exam, or evaluation.

### **Need for Inclusion**

Analysis suggests that students are in need of more opportunity to practice and reflect on content while connecting it to their previous experiences and generating examples for future application. Thus, students with strong study habits participated in discussions that were more meaningful and performed better on assessments, exams, and evaluations. This suggests that instruction should include time-management, note taking, and other study habits during foundational course instruction. Overall, analysis suggests a focus for instruction based on identified performance gaps and instructional support required to strengthen study habits and enhance knowledge of content through increased opportunities to practice.

Students are not prepared for, and do not actively participate in, meaningful classroom discussion. An unacceptable number of students fail to pass assessments with 90% accuracy. Across the past two years, students have scored an average of 79% (Department of the Army, 2019). Students do not conduct pre-work, fail to prepare for classroom activities, do not participate in meaningful discussion, and perform poorly on assessments, exams, and evaluations. Textual readings are the only format available for students to engage in pre-work activities. The assessments, exams, and evaluations utilize a combination of open-response writing and multiple-choice questions. The goal of the instruction is to achieve a higher order of thinking (analyze). The assessments, exams, and evaluations include time limits and do not authorize the use of notes or reference material.

Lastly, all three members of the project team are graduates of the SMC. As such, each team member has approximately nine months of experience in both the synchronous and pre-work environments mentioned previously. During team discussion sessions, the team concluded that an adjustment to the pre-work environment within the SMC would have proved beneficial to each of them throughout their time as SMC students. The current pre-work environment limits student potential, increases stressors, and is inadequate regarding consideration of multiple learning styles.

## **Goals and Objectives**

### **Instructional Goals**

The first of this project's two goals is to determine the best method of delivery of appropriate content required for pre-work that maximizes student time and skills but also appropriately prepares students to engage in meaningful classroom instruction. The second goal is to facilitate students in developing the knowledge of the lesson content, to facilitate personal reflection of one's past experiences, and generate meaningful classroom discussion through the strengthening of individual student pre-work study skills.

### **Learning Objectives**

The first objective of this learning modality is that pre-work utilization and participation rates increase dramatically. Further, students will use provided advance sheets to review material prior to the start of classroom discussion. In addition, students will reflect and link course material and content to personal experience while taking notes and generating questions for further understanding.

The second objective is that 100% of students engage in meaningful discussion with other students. The purpose of this objective is to ensure complete understanding of the material while sharing experiences and asking relevant questions about the experiences of others. Ultimately, this objective will result in increased classroom interaction, dialogue, discussion, and learning.

The third and final objective is that students pass assessments with 90% accuracy or better 100% of the time. While the standard for the majority of SMC assessments, exams, and evaluations is 80%, we anticipate that when provided with multiple modalities of pre-work engagement, the majority of students will surpass the established standard. This objective, designed to increase the level of proficiency of students within the SMC, will result in an enhanced level of proficiency throughout the U.S. Army's population of SMC graduates.

### **Benefits to Students**

Student satisfaction and motivation increased by improving delivery of pre-work content and through the strengthening of individual study skills. This maximizes the efficiency of student engagement during time away from the institution, reducing family frustration and preventing overload. Students complete their assignments, participate in classroom discussions, and perform well on assessments, exams, and evaluations.

### **Benefits to Facilitators**

Higher levels of student preparedness increase the likelihood of student-led discussion, requiring lower levels of facilitator engagement and classroom management requirements. Facilitators can focus on active listening and questioning to guide the students through the lesson as opposed to experiencing higher levels of frustration through reengagement of students on

required pre-work content. Additionally, facilitators can synthesize what other students have contributed and can work to achieve higher order levels of thinking.

### **Evaluation of Project Goals**

The proposed evaluation will include assessment protocols, utilizing student-volunteers and facilitators as subjects.

#### **Target Audience**

The target audience for this project is primarily Sergeants Major Course (SMC) students and facilitators. The SMC serves as the penultimate level of NCO professional development and education for the U.S. Army. The course, accredited as a degree producing institution by the Higher Learning Commission, utilizes the university model and closely follows the methods of instruction found in most civilian institutions of higher learning. Additionally, the course lasts one academic year running from August through June at Fort Bliss, Texas. Students selected for attendance at the SMC receive permanent assignment to Fort Bliss with authorization to relocate their families at government expense.

SMC student education levels vary from high school diploma, or equivalency, to graduate degrees. All students have served in the military anywhere from one decade to 2.5 decades or more. Further, all students share a common language and institutional values. Learners' experience may differ greatly due to military occupational specialties (MOS), operational assignment opportunities, and roles within their organizations. All have completed professional development courses at the basic, advanced, and senior levels and some completed the master-level course. Large gaps exist between professional development training for some students. Reading and writing proficiency can vary amongst students due to opportunities to practice in their field and educational backgrounds. Rates of service termination and retirement upon graduation are low, with the three-year additional service requirement effecting most students upon completion of the course.

SMC students, selected through a centralized board process that serves to choose the best and brightest enlisted Soldiers for SMC attendance, compose an extremely diverse student body. The SMC student body represents all demographics including those relating to race, religion, gender, sexual orientation, and MOS. Further, the SMC serves as host to 40 International Military Students (IMS) per class. Selected from nations across the globe for SMC attendance, IMS result in yet another dimension of student diversity. Commonalities shared by SMC students include military service and potential for promotion to the highest of enlisted ranks. For further demographic information regarding the SMC student body, please refer to the Audience Profile paragraph located on page 5 of this report.

#### **Technology**

Currently, the Blackboard LMS is the Army's system of record used to access the advance sheets and the bookshelf for viewing pre-work content (Department of the Army, 2016). Analysis concluded there is no evident performance gap regarding the use of this technology. Analysis did conclude that content delivery was inefficient. Evaluation of podcasts, videos, and

blogs for use as appropriate delivery methods of pre-work content and their suitability for use in conjunction with Blackboard LMS is required.

### **Podcasts**

Podcast technology utilizes audio recording to deliver content through, most commonly, MP3 audio files. Most current devices, including smartphones and computers, are capable of easily creating and editing these files, but for the purposes of this project, utilization of the professional sound booth and recording equipment owned by the NCO Leadership Center of Excellence is optimal. After creation, the Blackboard LMS will house the podcast files that correlate to pre-work for student download and use. Students can leverage this capability by downloading the files to their personal devices for listening while away from the institution. The intent of podcast utilization is to target auditory learners that struggle with textual comprehension and retention, as well as students that require the convenience of transportable and easily accessible pre-work material. These audio files can be easily accessed and reused.

### **Videos**

Video technology is similar to the technology used to produce the aforementioned audio files. Conversion of videos to MP4 files allows viewing of the files on common consumer devices such as smartphones, tablets, and computers. The videos focused on for this project have no limitations, other than the maintaining the current content of textual pre-work, and can utilize countless methods for construction and production. For example, facilitators will have the ability to narrate PowerPoint presentations and convert them to MP4 video files.

In addition, facilitators and designers will explore the use of preexisting videos that cover the intent of the pre-work or newly constructed videos designed specifically for the lesson content. Video pre-work content will be available for download from the Blackboard LMS, similar to the podcast content, by students. This modality of pre-work intends to target visual learners that struggle with textual and auditory comprehension and retention. Lastly, the video files provide convenience to students, as they will be accessible to stream or for download and viewing on the student's personal devices.

### **Blogs**

Weblogs, or blogs for brevity, are open-source websites used to report the thoughts, ideas, concepts, and information of the author. Blog users can review the author's information and postings for the purposes of knowledge acquisition, content understanding, or even entertainment. Further, blogs are collaborative as users are able to post personal responses to the author's postings where they are able to ask questions, make comments, or seek clarification on a given topic. For the purposes of this project, class facilitators will author blogs, accessible through the Blackboard LMS, to post material and to host conversations regarding pre-work. Blogs provide students that prefer textual reading with the additional support of facilitator interaction.

## Challenges

The challenges faced ranged from organizational and attitudinal, to financial constraints and limitations. Organizationally, the Army, and more specifically the Sergeants Major Course (SMC), is limited in responsiveness regarding the implementation of changes and while some showed enthusiasm others showed resistance to drastic suggestions to curriculum adjustments. The second challenge faced was attitudinal in nature regarding the Sergeants Major Course. More specifically, the instructors and leaders of the NCO Leadership Center of Excellence struggled to recognize the performance gap indicated by this project resulting in underwhelming support for the proposed changes. Again, enthusiasm was highly individualized.

The most significant challenge was attempting all this during a pandemic combined with a one week window to test our content once every eight weeks. With the students constantly changing back and forth between synchronous and asynchronous instruction and instructors constantly trying to adapt lesson plans to an already complex and dynamic environment, there was little appetite to add more pressure on the instructor team. The pressure of course being the requirement to create and implement new material from home. It was assessed that there was already significant change to lesson plans going on during this period and asking for more from a stressed and stretched team was inappropriate.

There were also some minor challenges regarding financial constraints and limitations. Conservation of funds and resources is of the highest importance to the Army. While cost to implement the technology is low there is a significant time commitment for creating and maintaining it. All these challenges combined, resulted in a reluctance to move forward with any suggested changes. Ultimately all challenges were sufficiently addressed through the presentation of statistical analysis regarding pre-work utilization and a correlation thereof to assessment, exam, and evaluation success rates, and at a more appropriate time the team could move forward with this idea.

## Results

To explain the results for this initiative, a breakdown of the formats for delivery of content is included below. The goal of this project is to enhance pre-work information retention by capitalizing on multi-modal content delivery, based on individual learning style. By tailoring pre-work content in text, audio, and visual formats, this project seeks to maximize retention of knowledge for the majority of learning styles. Framed below are the results of podcast, blog, and video platform content delivery for pre-work content, prefaced by the implementation of these platforms within the Blackboard LMS.

### Blackboard

Blackboard LMS serves as the central location for all pre-work material and houses the required links and files for pre-work content. The creation of sections, within Blackboard, to properly divide audio files (podcasts) and video files (streaming visual content) that serve to augment, and potentially replace, the text readings required for pre-work prior to classroom

lessons must be completed. This task remains pending due to the prioritization of efforts and missions for which the SMC information technology team is responsible.

- Through a concerted and collaborative effort, instructional designers, facilitators, and software developers will work to create a framework within Blackboard that allows for ease of use and maximum effect of instructional devices such as podcasts and videos.
- The Blackboard pre-work environment is easily accessible by all students and developers for required updating, as curriculum evolves.
- Course facilitators evaluate the efficacy of pre-work content within the classroom to ensure retention and understanding of content.
- Instructional designers utilize facilitator evaluations and feedback to conduct design adjustments to the Blackboard system to enhance efficiency and effect of content on students.
- Software-development team members serve as the single point of contact for, and integration of, content updating.

### **Podcast Content**

Through narration, podcasts serve as an alternative method for pre-work with a focus on auditory learners. Facilitators and instructional designers evaluate current pre-work readings and text to produce scripts for reading by narrators. Students may access the audio files, converted from recorded readings and nested with the pre-work text and video files, for review on Blackboard.

- Instructional designers tailor podcast content for auditory learners to ensure maximum effect and retention of knowledge by those who struggle with textual reading knowledge retention and visual learning.
- Podcasts include, but are not limited to, emphasis on key terminology, definitions, processes, ideas, and theories required by specific course learning objectives and outcomes.
- Course facilitators evaluate the efficacy of podcasts within the classroom to ensure retention and understanding of content by auditory learners.
- Instructional designers utilize facilitator evaluations and feedback to conduct design adjustments to podcast structure to enhance efficiency and effect of content on students.
- Software-development team members serve as the single point of contact for, and integration of, content updating.

### **Video Content**

Through video recording, video content serves as an alternative method for pre-work with a focus on visual learners. Facilitators and instructional designers evaluate current pre-work readings and text to produce scripts and storyboards and select existing video media for use in the creation of video products. Students may access the video files nested with the pre-work text and audio files, for review on Blackboard.

- Instructional designers tailor video content for visual learners to ensure maximum effect and retention of knowledge by those who struggle with textual reading and auditory learning knowledge retention.
- Videos include, but are not limited to, emphasis on key terminology, definitions, processes, ideas, and theories required by specific course learning objectives and outcomes.
- Course facilitators evaluate the efficacy of videos within the classroom to ensure retention and understanding of content by visual learners.
- Instructional designers utilize facilitator evaluations and feedback to conduct design adjustments to video structure to enhance efficiency and effect of content on students.
- Software-development team members serve as the single point of contact for, and integration of, content updating.

### **Blog Content**

Blog content serves as an interactive and responsive method of pre-work content delivery through initial posting of textual content and a moderated discussion with comments and feedback to define the goals of the readings.

- Instructional designers design blogs that are specific to each course and provide facilitators with a framework for blog management to take full advantage of the course material with consideration to the targeted students.
- Course facilitators, serving as subject matter experts, initiate and moderate blogs for student use through the provision of textual knowledge content and rapid responses to student inquiries and comments.
- Course facilitators evaluate the efficacy of blogs within the classroom to ensure retention and understanding of content by students.
- Instructional designers utilize facilitator evaluations and feedback to conduct design adjustments to blogs to enhance efficiency and effect of content on students.
- Course facilitators serve as the single point of contact for, and integration of, blog content updating.

### **Final Results**

Yet to be seen are the outcomes of the multi-modal approach to pre-work delivery within the SMC. Due to overarching adjustments to synchronous attendance, curriculum delivery, and assessment protocols, resulting from restrictions associated with the COVID-19 pandemic, the team has not been able to evaluate the true results of this project. However, of those students surveyed, students are very receptive to the adjustments and appreciative of the variation of learning modalities. It has been determined that students are more inclined to complete all pre-work activities more regularly when provided with alternatives to textual reading alone.

Further, upon survey, it has become apparent that students prefer podcasting above all other modalities. The preference towards podcasting is a result of better portability, accessibility, and convenience. Video pre-work is also quite effective, but requires students to focus both auditory and visual attention while podcast products require only auditory attention. Blogging

seems to be the least preferred of the three presented alternatives, as it requires active participation from both the student and facilitator. However, blogging was still preferred above the legacy textual reading pre-work format.

Given the results, it is the opinion of the team that we would not adjust our project's intent, framework, design, components, or construction if given the opportunity. However, we would seek to implement this project on a broader basis by focusing on all levels of U.S. Army Professional Military Education (PME) as opposed to only one level, the SMC. By integrating the initiatives of this project across all levels of PME, our project would gain greater levels of impact and would acquire higher levels of support throughout the U.S. Army.

### **Reflections**

This project provided an opportunity for our team to not only identify a performance gap in an actual academic institution, but it allowed us to utilize our skills to enhance the professionalism, proficiency, efficiency, and effectiveness of our own personal institution of employment. The collaborative efforts of our team members, when coupled with our individual experiences as previous students of the SMC, provided a truly impactful and relevant solution to a real-world problem with the SMC. As future SMC facilitators, all team members involved in this project stand to gain a certain level of beneficial return from it efforts.

### **How it Worked**

Through implementation within the Blackboard LMS, which is the system already utilized by the SMC, the transition from textual reading pre-work material to a multi-modal approach is virtually seamless. This project still requires a substantial amount of effort, from both the team and the current SMC staff and faculty, to begin the process of pre-work conversion.

SMC facilitators indicate the use of this approach to pre-work will stand to enable more thorough and substantive synchronous and asynchronous learning sessions while also providing focus and efficiency. Facilitators also appreciate that students will have increased opportunities for pre-work engagement and look forward to a reduction in readdressing lesson content during class. Lastly, SMC facilitators will increase their personal levels of educational technology understanding, resulting in higher levels of technological expertise within the SMC.

SMC students are excited for the prospect of a multi-modal pre-work approach upon recommencement of routine SMC attendance in the future. They have indicated that the alternatives to textual reading pre-work are far preferred and serve as a welcomed change. Lastly, SMC students indicate that exposure to these different formats for pre-work engagement has broadened their perspectives on how to disseminate information with specific learning styles in mind. Upon completion of the SMC, graduates will be able to utilize this technology in their operational organizations to enhance training capacities and capabilities for their Soldiers and civilian employees. Ultimately, COVID-19 restrictions have prevented project implementation, which is especially unfortunate because distance-learning students may have benefitted significantly from having these additional resources within their new learning environment.

Appendix A: Final Product

**MULTI-MODAL PRE-WORK**  
**ENHANCED OPTIONS FOR SMC STUDY**

**ALL SMC PRE-WORK READINGS HAVE BEEN CONVERTED INTO AUDIO, VIDEO AND BLOG FORMATS TO BETTER FACILITATE PRE-WORK COMPLETION FOR VARYING LEARNING STYLES.**

**PODCASTS** - Audio files of recorded legacy pre-work text reading to enhance comprehension for auditory learners.

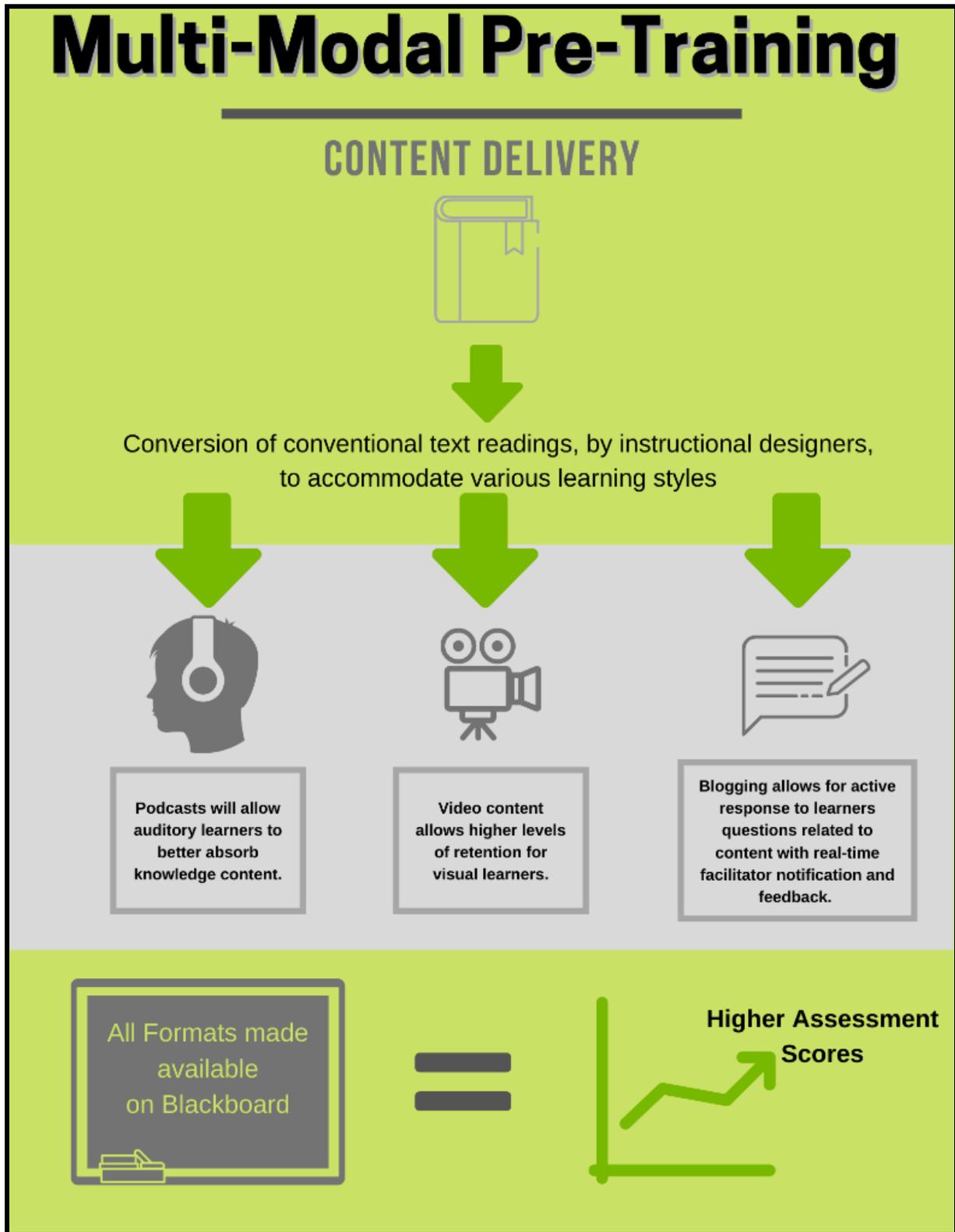
**VIDEOS** - Video files that combine readings of legacy pre-work text with advanced visual aides and videos to enhance comprehension for visual learners.

**BLOGS** - Interactive discussion boards which give the user a forum for discussion about pre-work with SMC course facilitators.

**LEGACY TEXT** - Text documents containing all required pre-work readings and material.

**THESE RESOURCES ARE MADE AVAILABLE TO ALL SMC STUDENTS THROUGH THE SMC BLACKBOARD LMS**

Appendix B: Project Infographic



### References

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