Remote Teaching Distance Education Working Group (RTDEWG) Report

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RTDEWG Sponsor:	COL Raymond Kimball, Chief of Faculty Learning, Innovation, Collaboration, and Research (FLICR)
Report Proponent:	Dr. Rachel Sondheimer, Vice Dean of Academic Affairs
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"A good teacher is a good teacher in-person and on-line." – from interview with Dr. Jenni Hayman, Cambrian College, 17 June 2020

EXECUTIVE SUMMARY

Background In response to an outbreak of COVID-19 disease the United States Military Academy (USMA) directed cadets during Spring Break AY19-2, to remain home and classes were continued remotely. To leverage the lessons learned from remote teaching, the Remote Teaching and Distance Education Working Group investigated four questions posed in a Dean's white paper:

1) What remote teaching techniques or practices should departments implement on a routine basis? What are the broad guidelines for their implementation?

2) What possibilities for hybrid and distance education should departments consider? What parameters should govern or bound that consideration? What aspects of the 47-month experience cannot be hosted online?

3) What capabilities need to be retained or procured to support the remote teaching and distance education objectives determined in 1) and 2)?

4) What policy changes, resourcing, personnel considerations, and education are required for implementation? What is the appropriate pacing for the implementation of various proposed changes? At what pace do other peer and aspirant institutions proceed in like expansions?

The following methods were used to address the questions

- Analyzed AY20-2 cadet and faculty survey data using traditional charts and sentiment analysis.
- Summarized and synthesized AY20-2 department requests for information.
- Summarized and synthesized panel responses at the Dean's AY20-3 off-site.
- Reviewed departmental end of course memos for AY20-2.
- Interviewed deans, instructional design teams, center directors, instructors, and other staff and faculty from 24 benchmark colleges.
- Reviewed policies/procedures for online courses at other institutions and with accrediting officials.
- Reviewed and summarized over 50 studies on online teaching and learning.
- Interviewed cadets and faculty through 4 focus groups.

Findings During remote teaching/learning cadets took more responsibility for their learning and faculty developed and learned of novel strategies to improve interactions. Challenges presented were inadequate technological capabilities, extended working hours that impacted work-life balance and academic integrity.

Recommendations Answering the questions above led to conclusions which we frame in the form of the following recommendations. These recommendations are stated below with the question they arose from and a link to the supporting evidence.

1. Remote courses should be comprised when possible as an effective incorporation of asynchronous methods with deliberate, meaningful synchronous teaching. Synchronous meetings should be deliberately designed to form authentic student engagement. (Questions 1 & 2) link

2. Course structure needs to be housed on one platform, and digital assignments need to follow principles of good "packaging" and integration into calendar applications. (Question 1) link

3. Easily navigable websites and one-page information sheets containing small video clips or links with step by step instructions on how to effectively deliver components of remote instruction should be developed. (Question 1, 2, 3, 4) link

4. Class assessments and academic honor education should be redesigned and reevaluated to improve cadet learning while at the same time minimizing underlying motivation for committing honor violations. (Questions 1 & 4) link

5. Remote teaching/learning training should occur at the appropriate institution levels. (Questions 1 & 3) link

6. The institution should consider hiring instructional designers and additional IT support to assist with remote course development. (Question 4) link

7. The institution should develop a class session recording/sharing policy for cadets. (Question 4) link

8. The institution should update the Documentation of Academic Work (DAW) and integrate with the Honor Regulation DPOM 02-04 to incorporate remote learning language and modality differences. (Question 4) link

9. Institution, department, and program level cadet guidance should include AI availability on remote platforms. (Question 4) link

10. Cadets taking courses remotely should have hard copies of textbooks to promote efficiency in learning. (Question 3) link

11. Sustain initiatives to promote cadet access to support services (Writing Center, CEP, Library) within appropriate remote teaching/learning platforms. (Question 4) link

12. The institution should plan for and support distance education for cadets who are studying abroad or on frequent travel (cadet athletes). The institution should explore other distance education possibilities, such as delivering interactive content to cadet candidates and courses for ROTC and other service academies. (Question 3) link

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1. BACKGROUND

In response to health concerns of an outbreak of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2 or COVID-19) disease, the United States Military Academy (USMA) directed cadets during Spring Break AY20-2, March 9-13, 2020, to remain home instead of coming back to post. The Academy was provided three days to transition the curriculum online to continue classes remotely. Initially, the Academy planned for remote teaching until 29 March. However, with increased COVID-19 cases, planning was changed to be inclusive of the entire semester. This report leverages the lessons learned from this experience and combines them with sources of knowledge external to USMA to investigate important questions involving remote teaching and distance learning.

1.1 How is the report structured?

The report begins with the background which includes the members of the working group and the study directives charged to the Remote Teaching and Distance Education Working Group (RTDEWG). These questions were focused, yet broad, and helped guide the appropriate interrogation of data sources to identify patterns and practices to further improve optimal remote teaching and learning for future application. Evidence that supported responses to the directed questions led to conclusions which we have formulated into recommendations and a preliminary draft of best practices. Each recommendation is stated with a summary of evidence supporting the recommendation. In some cases, there was moderate evidence for guidance, or the guidance needed to be tailored to the unique circumstances and environment of our institution. In these cases, the working group felt that pilot studies and more deliberation are needed to see how to set recommendations at USMA. These questions we list in the section on further investigation. The specific answers to the study questions follow the section on further investigation. Finally, we provide the methodology used to develop this report. For the convenience of the reader, the entire report contains links to original data sources and to locations within this document. In addition, when referencing an expert interview, the interview videos are linked with a time stamp to identify the location in the video to where the reference statement occurred.

1.2 What are the RTDEWG directives?

The RTDEWG was tasked to investigate the following questions:

1. What remote teaching techniques or practices should departments implement on a routine basis? What are the broad guidelines for their implementation?

2. What possibilities for hybrid and distance education should departments consider? What parameters should govern or bound that consideration? What aspects of the 47-month experience cannot be hosted online?

3. What capabilities need to be retained or procured to support the remote teaching and distance education objectives 1. and 2., above?

4. What policy changes, resourcing, personnel considerations, and education are required for implementation? What is the appropriate pacing for the implementation of various proposed changes? At what pace do other peer and aspirant institutions proceed in like expansions?

1.3 How did the RTDEWG investigate these questions?

The following methods were employed to determine the answers to the posed questions:

- Analyzed cadet and faculty survey data using traditional charts and sentiment analysis.
- Summarized and synthesized a departmental request for information.
- Summarized and synthesized panel responses at the Dean's off-site.
- Reviewed departmental end of course memos.
- Interviewed deans, instructional design teams and instructors from 24 benchmark colleges.
- Reviewed policies/procedures for online courses at other institutions and with accrediting officials.
- Reviewed and summarized over 50 peer-reviewed studies on online teaching and learning.
- Interviewed cadets and faculty through 4 focus groups.
- Met weekly as a group to tabulate progress and share information across WG subcommittees.
- Synchronized efforts with the Remote Teaching Distance Learning Best Practices Working Group.

1.4 Why is it important to address these questions and act upon the findings?

We found three important reasons why we should invest time and energy into delivering remote teaching using best practices:

1.Cadet course end feedback indicates that 78% of cadets responding took more responsibility for their own learning (**Figure 1** to the right).

2. Due to the move to the remote platform, many ***faculty modified and developed creative methods*** to improve interactions between cadets and to help cadets learn more deeply (Faculty end of semester survey).

3. Cadets need to feel engaged with the remote teaching environment, so they do not give up or disconnect with the course. On course end cadet feedback, nearly half of cadets responded neutrally or negatively to the question "Participating in the remote environment made me want to continue to learn at USMA and beyond" (see **Figure 2** below).

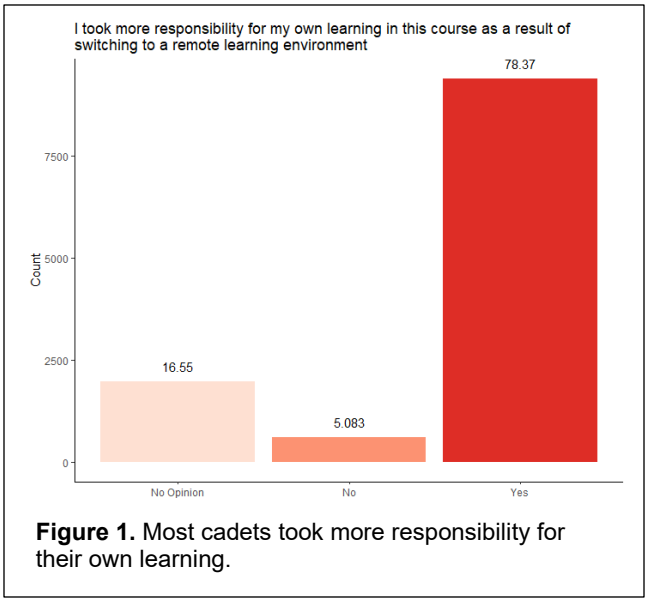

Figure 1. Most cadets took more responsibility for their own learning.

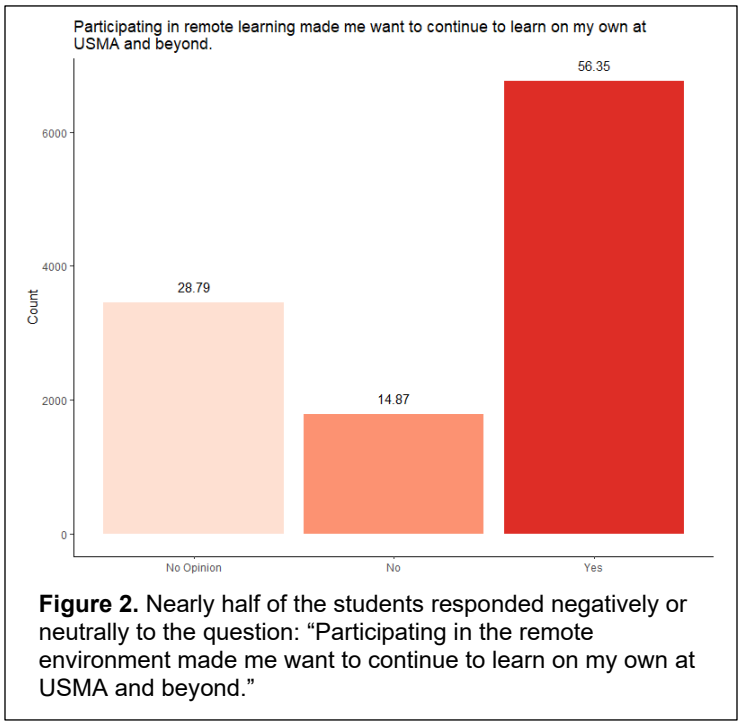

Figure 2. Nearly half of the students responded negatively or neutrally to the question: "Participating in the remote environment made me want to continue to learn on my own at USMA and beyond."

Investing in our remote classes can increase cadet responsibility for their own learning and aligns with our mission for educating Army Leaders. Additionally, this investment can increase the desire for our cadets to want to continue to learn on their own at USMA and beyond.

1.5 Remote Teaching Distance Education Working Group (RTDEWG) Membership

The RTDEWG Membership is shown in **Figure 3** on the next page.

The RTDEWG was represented by a diverse group of faculty and staff from across post. The working group members were comprised of a mixture of junior and senior faculty, civilian and military faculty, faculty who taught core, major and elective courses, and faculty who serve as course directors. The working group also consisted of members with Academy institutional experience, who served on USMA-wide committees and have been involved in accreditation both Middle States Commission on Higher Education (MSCHE) and Accreditation Board for Engineering and Technology (ABET). The different and important USMA viewpoints of the working group helped direct and shape this report.

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Figure 3. Remote Teaching Distance Education Working Group Members

1.6 Table of words related to remote teaching/distance education or methodology used in the report.

There are several words related to remote teaching/distance education or methodology which a reader may be unfamiliar with. These words, when used in the report, are hyperlinked back to **Table 1**.

Table 1: Definitions and descriptions of words related to remote teaching or methodology used in this report.		
Word	**Definition**	**Comments/Examples**
Bigram	A pair of words that follow each other in a sentence after stop words (e.g. of, that, in, a, the) are removed.	The definition of bigram with stop words removed is: "pair words follow each other sentence **stop words** removed" An example of a bigram in the above is **stop words.** The most frequent bigrams were calculated to detect patterns in the free-text responses from surveys.
Asynchronous learning	Asynchronous learning describes forms of instruction/learning that do not occur in the same place or time. Asynchronous learning occurs without real-time interaction.	Posted videos of lectures that students are required to view is an example of asynchronous learning.
Synchronous learning	Synchronous learning is education that happens in real time.	A class that meets at 1100 Mondays either online or in-person.
Instructional designers	Instructional designers are trained to design instructional content, typically for online courses. They are also trained on how students learn and what materials and methods will most effectively help individuals achieve their academic goals.	Instructional design teams served an important role at institutions during the emergency remote teaching experience in the Spring. Several institutions indicated they are hiring instructional designers for future remote teaching needs.
Remote Teaching	Remote teaching is the contingent continuation of a face-to-face academic course when circumstances make it impossible for the class to meet physically.	Definition from RTDEWG whitepaper.
Distance Education	Distance education is the non-contingent delivery of a course designed from its origin to use remote means of instruction.	Definition from RTDEWG whitepaper.
Hybrid Education (Blended)	Any teaching method that involves using a mix of both distance and face-to-face instruction. Also known as *blended*.	In some cases, the teacher designates specific in-person and distance/online activities. Examples include flipped classrooms, lab rotations, or individual rotation methods. In others, the student has the choice of what version (remote/in-person) they can attend.
HyFlex Classroom	A specific method of hybrid education where every lesson is conducted face-to-face, while also allowing students to attend that class remotely either synchronously or asynchronously. The "Flex" stands for flexibility in student choice on whether they attend in-person, remote synchronous or asynchronously.	Instructors must be prepared to support student choices. Posting class videos is inadequate since asynchronous students require different learning activities to replace in class discussions and group work.
Hybrid Distance Learning	Any distance teaching method that involves the use of both asynchronous and synchronous components.	An example of hybrid distance learning are weekly assignments that students complete asynchronously, with the class coming together bi-weekly at a synchronous online meeting.

2. RECOMMENDATIONS

Investigating the questions set as the focus of the report using several data sources provided to us and additional data obtained by the working group led to 12 distinct recommendations. This report lays out these recommendations with the evidence to support them. Some of the analysis we performed led to more questions that require additional investigation. These we lay out as recommendations that require deeper investigation preferably by a Dean's level committee. Finally, all recommendations should be considered as suggestions with an experimental viewpoint. While the literature, surveys and feedback may support these initial recommendations, USMA represents a unique environment requiring a continuous and informed feedback loop of testing changes and revising the recommendations to meet our needs. Testing and revising recommendations should occur at all appropriate levels throughout the institution. Enabling balance between directed actions and maintaining flexibility at the department, program, course director, and instructor levels must be considered.

Table 2 (next page) contains each of our recommendations with the question it is linked to. The rightmost column of the table provides our suggested USMA group/leadership to guide implementation of the recommendation.

2.1 Remote courses should be comprised when possible as an effective incorporation of asynchronous methods with deliberate, meaningful synchronous teaching. Synchronous meetings should be deliberately designed to form authentic student engagement.

"Place all content that does not require student interaction outside of the synchronous time and reserve and be deliberate about interactions during your synchronous meetings". -Dr. Chad Topaz, Williams College

All course content that can be delivered asynchronously, should be, with synchronous meetings reserved for discussion and cadet interaction.

This recommendation is based on faculty and cadet feedback, department level feedback, higher education research on online courses, and feedback from peers at other institutions.

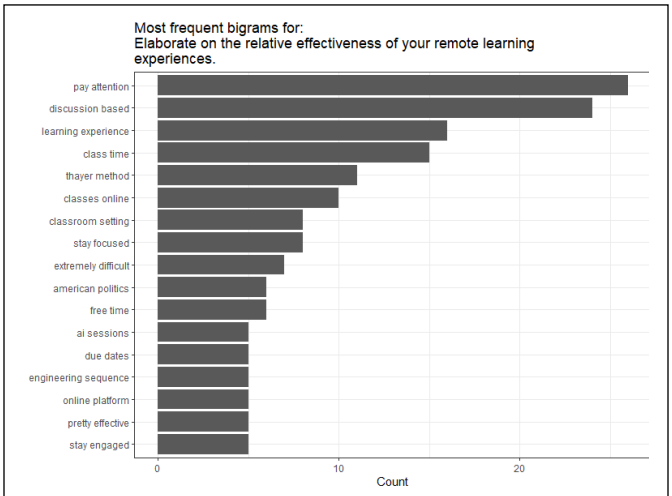

Figure 4. Bigram related to remote learning experience.

- Cadets found purely synchronous courses challenging to pay attention evidenced by the top bigrams **Figure 4** to the right and call out box below (Cadet AY20-2 remote teaching survey). Top bigrams reference the most frequent word pairs used in open survey responses. Once a frequent bigram is identified, we can search for the bigram to find the specific context of how the word pair was used.

- Many faculty reported more positive results from students after switching to an asynchronous/synchronous blend. (Faculty AY20-2 remote teaching survey)

> "I was less motivated to pay attention in classes since most of my classes gave easier tests/quizzes. I stopped taking notes in most classes since quizzes and tests were open note or book."
>
> "However, a class where I had to listen to a lecture online I was often bored and did not pay attention."
>
> "It was really hard to pay attention during classes that I was not interested in."

- In the request for information to departments, every department except for one recommended an asynchronous/synchronous blend of instruction (Response to Department RFI).

- Cadets who were taking courses that were entirely asynchronous without instructor contact reported feeling isolated and disconnected. During Focus group discussions, cadets recommended blending some synchronous instructor contact. Cadets also indicated they wanted the synchronous component to not repeat or duplicate information that was available in the asynchronous component(Cadet focus group, Cadet AY20-2 remote teaching survey and call out box with quote from Dr. Chad Topaz, Williams College below).

Every institution that has experience in online teaching recommended a blend of asynchronous and synchronous teaching for optimal student engagement (see for example: Bonni Stachowiak, Dean of Teaching and Learning, Host of the Teaching in Higher Ed Podcast, Vanguard University at 8:15 and 19:17, Donnie Horner, Provost Emeritus and Professor of Management, Jacksonville University at 15:22).

• Studies on research comparing different modes of online teaching find that asynchronous modes of interaction do not foster student cooperation well without oversight and synchronous meetings, while purely synchronous classes are inflexible, difficult to monitor and do not fully leverage the benefits of the online platform (1-7).

• Asynchronous-synchronous blends most often form a "flipped classroom" where lectures and static content are viewed before class time (8). Class time is reserved for learner-to-learner or learner-to-teacher interaction.

Table 2: Summary of Recommendations

Best Practices	Personnel	Policy	Resources	Suggested Implementation Groups
1. Remote courses should be comprised when possible as an effective incorporation of asynchronous methods with deliberate, meaningful synchronous teaching. Synchronous meetings should be deliberately designed to form authentic student engagement. (Questions 1 & 2)				CTE, RTDL-BPWG, FLICR
2. Course structure needs to be housed on one platform, and digital assignments need to follow principles of good "packaging" and integration into calendar applications. (Question 1)				CTE, Dean, IT, FLICR
3. Easily navigable websites and one-page information sheets containing small video clips or links with step by step instructions on how to effectively deliver components of remote instruction should be developed. (Question 1 & 3)				CTE, RTDL-BPWG, FLICR
4. Class assessments and academic honor education should be redesigned and reevaluated to improve cadet learning while at the same time minimizing underlying motivation for committing honor violations. (Questions 1 & 4)				Departments, Dean's Staff, Deans Fellows, Simon Center and RTDL-BPWG
5. Remote teaching/learning training should occur at the appropriate institution levels. These training programs should be developed as soon as possible and sustained. (Questions 1 & 3)				CTE, RTDL-BPWG, Dean, Departments, Program Directors
6. institution should consider hiring instructional designers and additional IT support to assist with remote course development. (Question 4)				Dean, Vice Dean for Resources, CIO-G6, G8
7. The institution should develop a class session recording/sharing policy for cadets. (Question 4)				Policy Dean's Fellow/Policy Committee
8. The institution should update the Documentation of Academic Work (DAW) and integrate with the Honor Regulation DPOM 02-04 to incorporate remote learning language and modality differences. (Question 4)				Simon Center, Policy Committee, WPLDS, Deans Fellows
9. Institution, department, and program level cadet guidance should include AI availability on remote platforms. (Question 4)				Dean, Department, Program Directors
10. Cadets taking courses remotely should have hard copies of textbooks to promote efficiency in learning. (Question 3)				Dean, ADPAP, Departments, Program Directors
11. Sustain initiatives to promote cadet access to support services (Writing Center, CEP, Library) within appropriate remote teaching/learning platforms. (Question 4)				CEP, Writing Center, Library, ODIA, USCC
12. The institution should plan for and support distance education for cadets who are studying abroad or on frequent travel (cadet athletes). The institution should explore other distance education possibilities, such as delivering interactive content to cadet candidates and courses for ROTC and other service academies. (Question 3)				Dean's Fellows for Remote Teaching and Distance Education, ODIA, USCC

Several meta-analysis of the literature indicates that a flipped classroom has an overall positive effect on students' learning achievement and learning motivation (9-11).

These data taken together, indicate that we need to be deliberate about how to engage cadets during the synchronous component of our remote classes.

2.1.1 What about cadet-instructor contact hours?

Credit hours typically, but not always, guide face-to-face classes. Traditionally, 1 credit hours equates to 1 hour of class meeting. However, courses with some content delivered asynchronously blended with synchronous contact does not translate into this paradigm. Contact hours in a remote environment changes form. The Department of Education states "The requirement is that the institution determine that there is an amount of student work for a credit hour that reasonably approximates not less than one hour of class and two hours of out-of-class student work per week over a semester for a semester hour or a quarter for a quarter hour." In a discussion regarding contact hours with Dr. Meg Benke, Empire State College's Provost and Executive Vice President for Academic Affairs, former Commissioner for the Middle States Commission on Higher Education, suggested we remain flexible as an institution and follow appropriate best practices for teaching in the remote environment. We note that the best practices we reviewed recommend frequent contact, but do not dictate how that contact is performed. Contact could be achieved with individual meetings with students, meeting students in small groups, or meeting synchronously at designated times.

2.2 Course structure needs to be housed on one platform, and digital assignments need to follow principles of good "packaging" and integration into calendar applications.

Good pedagogy relies on strong structure, and online instruction even more so (Robert Halliday and Polly Smith, Senior Associate Provost, Dean for Graduate Studies / VP School of Online and Extended Studies & Associate Provost for Online Learning, Utica College at 13:20 and 50:30, Steve Misuraca, Asst Dean of Students for Full-Time MBA Program, Duke University at 48:57, Riley Caldwell O'Keefe, Director of Center for Teaching and Learning, Amherst College at 37:17, Mark Parker, Associate Dean of Continuing Studies & Associate Professor, Norwich University at 11:45).

Cadets in focus groups reported enjoying the different technology used by faculty. On the other hand, cadets reported challenges with different platforms used by multiple classes. For example, one cadet could have two classes using Teams, one using Blackboard and one using Zoom. Materials and content accessed external to these platforms (WebAssign, YouTube) made it even more difficult for cadets to navigate course materials. Cadets indicated if links to meeting locations and course material were centrally located and remained consistent throughout the semester, this would mitigate the burden.

Within this discussion, which platform is "best" was often brought up. In our recent remote teaching/learning experience, cadets preferred Microsoft Teams with Blackboard/Blackboard Collaborate second (**Figure 5** below to the right). From the free response text of the cadet survey (**Figure 6** next page), the most frequent bigrams for Teams were "Calendar Invite," while the most frequent bigrams for Blackboard were "Hand raising. We note that Teams has now included a hand raise feature and breakout rooms can be achieved by setting up channels. On the other hand, Blackboard class meeting invitations can be manually sent out. More specifically, what is a desirable and simple feature on one platform can be achieved by the other platform.

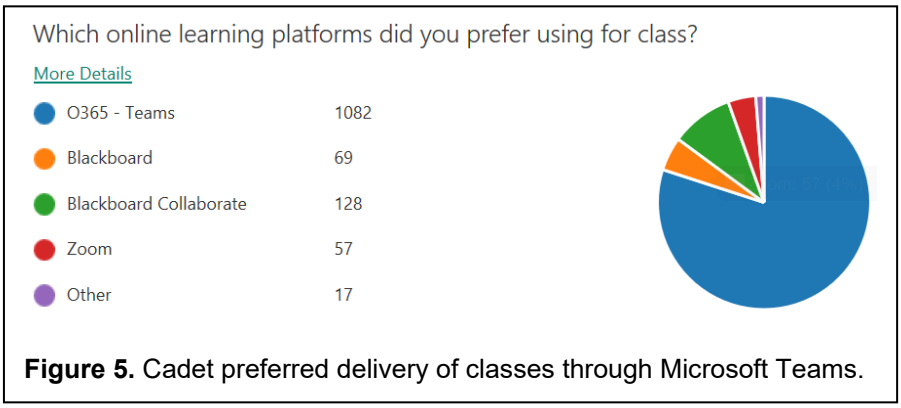

Figure 5. Cadet preferred delivery of classes through Microsoft Teams.

While enforcement of a single technology platform can promote consistent structure, it is not a guarantee that consistency across the course will be achieved. Additionally, good packaging (see what is meant by course packaging) can occur when multiple platforms are used across classes, provided that there is a common one within a course. In interviews, we heard a mix of positions – some institutions enforced a single enterprise-wide LMS platform, others did not. However, all highlighted the importance of providing structure and consistency within a

course. Instructors should not employ too many pedagogical techniques and should use them repeatedly until students become comfortable with it (Shaina Rowell, Education Specialist, Center for Integrative Research on Cognition, Learning, and Education (CIRCLE), Washington University St. Louis). The principles of digital assignment packaging help alleviate the confusion of students, who must manage multiple deadlines (10 rules for digital packaging).

Cadets reported on the end of semester survey that they relied heavily on Microsoft Outlook calendar class meeting reminders to stay on schedule. At the enterprise level, course commitments of time (i.e., class meeting

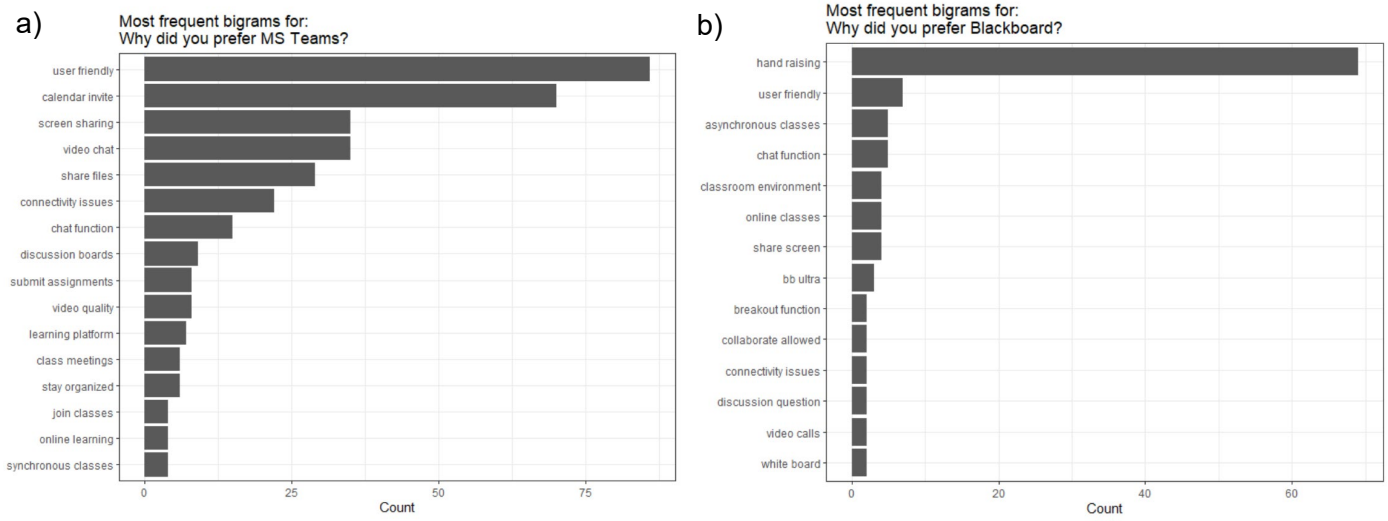

Figure 6. Bigrams regarding preference for (a) MS Teams or (b) Blackboard.

time and scheduled guest speakers) should be sent as calendar invites to provide worry-free confirmation of time-specific commitments across all classes to allow cadets to manage their time and identify and address conflicts. Additionally, cadets suggested during focus group interviews that instructors include assignments and deadlines in the outlook invite.

2.3 Easily navigable websites and one-page information sheets containing small video clips or links with step by step instructions on how to effectively deliver components of remote instruction should be developed.

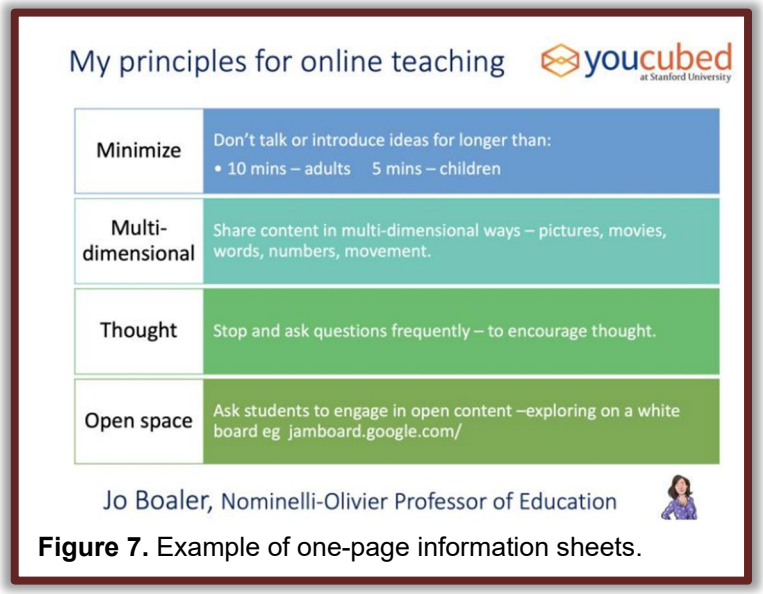

Figure 7. Example of one-page information sheets.

Many benchmark institutions we interviewed recommended and shared with us their websites and one-page information sheets. The information sheets range from best practices to more technical instructions. These resources can be accessed here. While workshops and didactic training forms another one of our recommendations, these best practices and one-page sheets will help faculty pull information on an as-needed basis. We also recommend that very short (6-8 minutes) "how-to" videos can reduce the training burden during new faculty training while providing information when and as needed. Suggested examples of videos are "How to make breakout rooms in Microsoft Teams" or "How to design authentic assessments in Discipline X" or "How to use technology tool Y". An example of a one-page information sheet developed by Dr. Jo Boaler, Online Educator, Professor of Mathematics Education at Stanford University, appears in **Figure 7** to the left.

Additionally, with the transition from face-to-face to remote teaching, faculty reported increased time in preparing, assessing and engaging students. The RTDEWG received feedback on best practices that reduce faculty time while increasing student learning. The web-sites and sheets should include and specifically tag tips to reduce faculty time while increasing student learning.

2.4 Class assessments and academic honor education for the remote learning environment should promote cadet learning while at the same time minimizing underlying motivation for committing honor violations.

Honor and academic integrity play a central role in the cadet 47-month experience and we expect our cadets to "not lie, cheat or steal, or tolerate those who do." While we need to trust and expect cadets to do the right thing, in on-site classes we still proctor major graded events like WPRs and TEEs. There is a deep challenge in moving these assessments to the remote platform. We looked into the underlying mechanisms behind academic dishonesty, what types of assessments improve learning outcomes and considerations associated with applying remote proctoring software. As part of this effort, we read Dr. James Lang's book on cheating in higher education (*Cheating Lessons)* which included evidenced-based class assessments that improve learning and reduce cheating. We set up an interview with Dr. Lang on the topic. We also investigated the free response text to the end of semester Faculty Survey question "Have the alternatives to TEEs provided this semester changed your views on the functionality of final exams and if so how?" A summary of what we have learned follows:

- Signing a statement right before taking an assessment, reminding students of their obligation to academic integrity reduces academic dishonesty.

- Frequent institution-wide education and discussion on what constitutes academic dishonesty reduce incidents of academic dishonesty.

- Giving more frequent low-stakes (lower in point totals) assessments in contrast to large high-stakes assessments improves learning and reduces incidents of academic dishonesty.

A high stakes assessment is a consequence-based assessment. Consequences could impact the final grade by raising or lowering it or serve as the basis of an external major decision such as admission to medical school. For example, some courses only assess students with a mid-term and final. The high point amount could drastically affect grade advancement, or letter grades. With that in mind, when it comes to West Point-specific high stakes assessments, pressure is even more increased. Cadets' grades can lead to major decisions such as: branching/OML, SLDP-M, WPWP training as a result of SWE, academic deficiency or probation.

Conversely, a low stakes assessment is a frequent assessment that, due to a low point value or lack of consequence, have minimal impact on the student. An example of a low stakes assessment would be a 5 point check on learning quiz done 5 times over the course of a semester (if course follows a 1000 point model).

- Providing deeper questions that require students to think or authentic assessments improves learning and reduces academic dishonesty. Authentic assessments consist of assessments that require students to "create". For example, instead of a multiple-choice quiz to assess what content has been learned at the end of the week, an instructor could ask students to develop a tweet that best captures the content covered over the week.

- Giving students multiple options to select their assessments improves learning and reduces academic dishonesty. For example, students can accrue points by either making a silent movie about content, writing a tweet, or taking a quiz.

- Assessments that have students interact with open notes, books and internet can improve learning and reduce academic dishonesty. For example, students can write a three-sentence review on the quality of a video they found on YouTube that explains content. Students can post their video link with their review on a discussion board which is then up-or-down voted by their peers giving feedback in the same way we select movies.

While these ideas are pedagogically sound with strong evidence to support them, the type of class that is being taught, the traditional forms of assessment that have been long-standing, and the faculty model at USMA make

it challenging for course leadership and instructors to develop and adopt new forms of assessments. We recommend that over the next year, research at USMA be conducted to develop and test novel assessments that improve learning and reduce academic dishonesty tailored to our environment.

2.4.1 What about proctoring software?

Dr. James Lang, author of Cheating Lessons, describes proctoring software as a waltz between students and software and sets up a mentality of "us" versus "them." Benchmark institutions had mixed responses to the use of proctoring software (see Towson State, Michael O' Leary (Professor & Chair Math) at 19:00), however, overall enthusiasm was not strong. In addition, Jose Raul Canay Pazos, Professor and Educational Assessment Researcher, University of Santiago de Compostela stated that for determined cheaters, proctoring software does little to deter. Furthermore, he stated that proctoring software only provides a "risk assessment" for academic dishonesty and is not definitive. Finally, the use of pedagogical software removes a contract between educator and student on learning goals and mastery.

2.4.2 What about choosing the harder right over the easier wrong?

During Dr. James Lang's interview, we posed the question of whether eliminating an environment that reduces the temptation for cheating may be a lost opportunity have our cadets learn how to choose the harder right over the easier wrong. Dr. Lang disagreed with this thinking. Dr. Lang pointed out that there are two more important reasons to supply an environment that does not tempt students to cheat. The first is that the very assessments that reduce cheating are also the assessments that increase student learning. The second reason was provided as an analogy. If you want to give up chocolate, you should develop the willpower to avoid chocolate. But you should also not buy chocolate and put it in your house. Dr. Lang also pointed out that younger students (plebes and yuks) may not have matured enough to understand the gravity of academic dishonesty which is something we can take the opportunity on which to educate cadets. (James Lang, Assumption College, Director of the D'Amour Center for Teaching Excellence, author of Small Teaching and Cheating Lessons at 11:28).

2.4.3 What about providing a culminating experience?

The majority of the faculty on the end of semester faculty survey found that their cadets learned more due to faculty members providing alternatives to TEEs. In addition, during the panel discussion, it was stated that questions on assessments during remote teaching required less of memory and consisted of deeper learning questions. However, from the answer to the question on the end of semester faculty survey "Have the alternatives to TEEs provided this semester changed your views on the functionality of final exams and if so how?" there were several responses from faculty that wished to retain TEEs in their traditional form to provide a culminating experience. We asked Dr. Lang about alternate forms of administering an assessment that is a culminating experience yet minimizes underlying reasons for academic dishonesty. Dr. Lang suggested portfolios of student materials with a student written summary at the front. Dr. Lang recommended similar culminating experiences provided by Dr. Francis Su during our interview.

Faculty End of Semester Survey

"We still need final exams as the culminating event for the course."

"I used a TEE. It is a good culminating event for a course that integrates across the course and requires studying to re-learn (sometimes learn correctly for the first time) the course material."

2.5 Remote teaching/learning training should occur at the appropriate institution levels.

Our working group identified several populations that required training on a remote platform.

1) Cadets need training. Benchmark institutions indicated that peer level training was being used to help students learn common platforms and navigate remote platforms (Cambrian College, Jenni Hayman Chair of Teaching and Learning at 32:45). We also found literature to support student training for online courses (Jose Raul Canay Pazos, Professor and Educational Assessment Researcher, University of Santiago de Compostela at 57:50, Maggie Debelius and Yianna Vovides, Director of Faculty Initiatives & Professor / Director of Learning Design and Research & Professor, Georgetown University at 42:59) (12). We propose that similar training be conducted at USMA through the academic cadet chain of command. Furthermore, it was indicated that cadets could be involved in planning course design and that they can be set up in student partnership programs to give feedback to the instructor and to assist with tasks like coordinating with synchronous online students (Jenni Hayman, Chair, Teaching & Learning Innovation Hub, Cambrian College at 34:00, Riley Caldwell O'Keefe, Director of Center for Teaching and Learning, Amherst College at 25:12).

Cadets are the best observers of the classroom (13) and being involved in planning course design (Riley Caldwell O'Keefe, Director of Center for Teaching and Learning, Amherst College at 25:12) will ensure improved delivery in the remote environment.

2) New faculty need training. New faculty may never have taught with remote tools and the best discipline specific training should be conducted during new faculty orientations. One method to save time and not lose content that is originally in place is to deliver some of new instructor training using remote methods.

3) Existing faculty need training. Benchmark institutions and studies on distance education indicate that faculty need training (14). Care and thought should be placed behind how training is disseminated. While it may be tempting to develop centralized workshops, benchmark institutions have found a diminishing return from centralized workshops because faculty learn best from each other and rely on peer faculty to learn new technology and best practices.

> "Faculty receive guidance or assistance from other faculty better than they do from *any* staff member. This is just the way it works. You want to hear that another faculty member has used this tool or set up the course this way and these are the outcomes they got."
>
> - Drs. Halliday and Smith, Utica College

Specifically, institutions that have invested in online teaching and learning have found that the best practice is to train a few instructors (Michelle Roehm, Vice Dean & Peter C. Brockway Chair of Strategic Management & Professor of Marketing, Wake Forest University at 35:13, Steve Misuraca, Asst Dean of Students for Full-Time MBA Program, Duke University at 12:30 and 43:15) (15). Most training occurs at the micro-level with one instructor showing another instructor how to develop remote instruction optimally for that discipline. Dr. Robert Halliday, Senior Associate Provost and Dr. Polly Smith, Associate Provost and Vice Provost for Online & Extended Studies from Utica College have spent over a decade developing online programs. They have trained many instructors who experience online education for the first time. They have found that a combination of expertise, such as Instructional Design experts and Teaching Success Coaches combined with peer-to-peer teacher development has been effective in preparing instructors new to online teaching (Robert Halliday and Polly Smith, Senior Associate Provost, Dean for Graduate Studies / VP School of Online and Extended Studies & Associate Provost for Online Learning, Utica College at 24:40).

In both 2 and 3 above, we need to support effective adoption of the online platforms. Faculty need to be educated on what the platform can do and how to use it. (Robert Halliday and Polly Smith, Senior Associate Provost, Dean for Graduate Studies / VP School of Online and Extended Studies & Associate Provost for Online Learning, Utica College, Maggie Debelius and Yianna Vovides, Director of Faculty Initiatives & Professor / Director of Learning Design and Research & Professor, Georgetown University at 17:30, Steve Misuraca, Asst Dean of Students for Full-Time MBA Program, Duke University at 43:15, Jose Raul Canay Pazos, Professor and Educational Assessment Researcher, University of Santiago de Compostela at 53:28)

Based on this information, *we recommend that a number of centralized workshops be attended by a group of core faculty like the department POCs from the Remote Teaching Distance Learning Best Practices Working Group and the workshop information be disseminated to departments through the POCs*. This approach may increase the spread of applicable pedagogy and allow for a more nuanced approach by each discipline.

We also need to support adoption of the LMS by faculty. To achieve this, faculty need to be educated on what the LMS can do and how to use it. External benchmark institutions held centralized short orientations to the LMS, however specific training was held either by instructional designers assisting individual instructors with their course design or with training occurring at a discipline-specific level.

Some examples of workshops or training we can conduct at USMA are available here.

2.6 The institution should consider instructional designers and additional IT support to assist with remote teaching course design.

Instructional designers help with the creation of instructional content typically for online courses, but they also are trained on how students learn and what materials and methods will most effectively help individuals achieve their academic goals(16). The majority of institutions we interviewed commented on the importance and deep reliance on instructional designers.

Representatives from the majority of institutions interviewed communicated that they relied on a team of instructional designers to aid in transitioning courses in response to the emergency remote teaching due to COVID-19 (Robert Halliday and Polly Smith, Senior Associate Provost, Dean for Graduate Studies / VP School of Online and Extended Studies & Associate Provost for Online Learning, Utica College at 22:33) and one state institution that is traditionally face-to-face just hired 8 instructional design experts for the fall in order to optimize the remote teaching experience (Michael O'Leary, Math Department Chair, Towson State University at 23:40) Instructional designers can strongly enhance content delivery as well as reduce stress and enhance the students online experience (15, 17-19).

An online teaching administrator, (Mark Parker, Associate Dean of Continuing Studies & Associate Professor, Norwich University), suggested for our needs that we hire free-lance or part-time instructional designers.

Based on the advice and feedback received from external benchmark institutions, we need to have enough instructional designers to answer individual faculty questions. The instructional designers also need to be prepared to answer directed questions about our LMS for specific course design.

2.7 The institution should formalize a class session recording policy for cadets.

Faculty at the Dean's off-site and within the working group raised concerns about recorded content. There are two reasons recorded content that is made public is of a concern. The first is that in-class discussions are vibrant and productive because cadets feel they have privacy to voice their opinions. The second is that faculty feel academically protected to have discussions about topics that may be controversial. Recordings taken out of context and publicly shared can diminish these very important aspects of the classroom.

Example of a Syllabus and Privacy Statement from Loyola University, Chicago

Syllabus Statement: In this class software will be used to record live class discussions. As a student in this class, your participation in live class discussions will be recorded. These recordings will be made available only to students enrolled in the class, to assist those who cannot attend the live session or to serve as a resource for those who would like to review content that was presented. All recordings will become unavailable to students in the class at the end of the course.

Privacy Statement: Assuring privacy among faculty and students engaged in online and face-to-face instructional activities helps promote open and robust conversations and mitigates concerns that comments made within the context of the class will be shared beyond the classroom. As such, recordings of instructional activities occurring in online or face-to-face classes may be used solely for internal class purposes by the faculty member and students registered for the course, and only during the period in which the course is offered. Students will be informed of such recordings by a statement in the syllabus for the course in which they will be recorded. Instructors who wish to make subsequent use of recordings that include student activity may do so only with informed written consent of the students involved or if all student activity is removed from the recording. Recordings including student activity that have been initiated by the instructor may be retained by the instructor only for individual use.

Most institutions delivering any form of online education have a recording policy. The recording policy has a two-fold purpose. One is to inform students that the classes will be recorded, why the classes will be recorded and the recordings duration of availability. This is referred to as a syllabus statement. The second is a privacy statement that protects both student and faculty. The privacy statement describes why recorded discussions in the classroom should not be shared outside of the classroom and states in clear language that the recordings performed during both face-to-face and online should only be used for internal class purposes and shared only with students registered for the class. Any sharing beyond the classroom requires informed consent of both students and faculty member.

A unique difference between other colleges and USMA is how we develop new faculty. Our working group suggests that the wording of any policy adopted by USMA allow for the use of recordings in new instructor training. These policies should include receiving instructor permission but may need legal review to identify boundaries of use along with additional protections for cadets enrolled in the course.

In addition to recording policies, questions of infrastructure investments are important to confront. Pre-recorded lecture video, accumulated recordings of classes, and other content for education-specific use may require a

video hosting environment that is secure (not public or searchable) and specified for adequate storage and use. Central factors for video hosting specifications include storage, simultaneous playback capability, and security/privacy. Institutions that do not have the appetite to build expertise in video server maintenance can outsource to service providers, many of which specialize in the education space (e.g., Microsoft Stream). Such services provide a secure environment for storage and viewing of educational video content.

2.8 The institution should update the Documentation of Academic Work (DAW) and integrate with the Honor Regulation DPOM 02-04 to incorporate remote learning language and modality differences.

As James Lang, author of Cheating Lessons pointed out in his interview, students may not understand the gravity of academic dishonesty. He equated this to our own ranking of speeding or rolling through a stop sign. We know it is wrong, but we scale this as an unimportant wrong. In Lang's book, he compiled research on campus wide policies and found that to create an environment that reduces academic dishonesty, ongoing conversations must occur beyond the first day of class about academic integrity. Discussions on the DAW occur in the classroom already and these need to be upgraded to include the remote environment. For example, how should cadets document viewing and using another cadet's discussion board response? These changes will take time and deliberate thought to develop. The changes should be integrated with Honor Regulations simultaneously to avoid confusion.

2.9 Institution, department, and program level cadet guidance should include AI availability on remote platforms.

Faculty End of Survey Quotes on Extended Days and Work-Life Balance
"This was a significant ask of all of us and while I think we overall executed well, I also believe that my work-life balance was completely eradicated. There was the feeling, whether actual or implied by ourselves, that we were supposed to be on and accessible all the time. The amount of work to execute the courses went well beyond the work day, into evenings and weekends."
"Lots of pressure to function at "full capacity" when time management is a new/different struggle with working from home and having young kids/toddlers (especially when spouse is working outside the home). My options are to 1) ignore my children to spend time in front of the computer and turn on the TV...way too much TV 2) work while my kids are napping and then after bedtime 3) Pay for a babysitter, risking contact and paying for care 4)have kids running around in the background and distract from class/professionalism is not at its best. I did a mixture of all the above. Its a double-edge sword, grateful to spend time at home, but also stressed more because I am not able to compartmentalize work and home life "balance."""
"Unfortunately, I feel as if I became too engaged and lacked work/family balance."
"It's nearly impossible to teach at my best when I have three computers sucking up bandwidth, two young kids playing/arguing in the background, and a wife who also needs to get her school work done after she finishes 5 hours of remote teaching a kindergartner."
"…it is harder to stay engaged all day; kids are screaming in the house and staring at a screen in a small closet is exhausting."
"This has elongated my work day and has had a negative impact on my own children."
"Students are more likely to reach out outside of the duty day."
"This is SOOO much more time consuming to prepare for class than normal. I had to drop all other non-teaching work just to keep class on track. And I was leveraging a lot of already built course materials from teaching the course previously."
"This took far more of my time than a normal semester. I don't think I was as engaged with cadets, but I was much more engaged with the course. Keeping up with the discussion boards was extremely time consuming."
"Also, having multiple children fighting for my attention all day makes it hard to sit and work on complex class material."
"Remote learning, and the Academy idea that we are somehow at war has changed the work situation for everyone to 24/7. Remote learning equals working all the time and that is physically and mentally taxing. I'm on-line with cadets at midnight or first thing in the morning. When the office is actually at home, it is hard to separate work from other activities."
"I made myself available 24/7 for cadet AI and questions."
"The anxiety is real!"

From the faculty survey responses, faculty focus groups and the department RFI, we found that shifting to the remote environment vastly increased faculty workload. Specifically, we found:

- Faculty survey responses reported feeling they were always "on" and having difficulty managing work-life balance (see call out box above above).
- Departmental and off-site Dean's panel feedback from faculty reported challenges in managing home-life with extended hours.
- One panel member stated that cadets can develop leadership skills from understanding which instructors will be responsive after hours and which will not. This is not different from knowing which boss you can call after hours and which ones you cannot.

At all institutional levels, providing guidance to manage cadet expectations of when faculty are available can help reduce and manage the faculty workday. Institutions with online programs send institutional level guidance on faculty response time to students. This guidance indicates that each instructor has their own response time for different reasons. For individual classes, faculty provide clear bounds on when students can expect to hear responses through the syllabus. An example of the University of Minnesota, Duluth's guidance on expectations for participating in online classes appears in the call out box below:

Availability of Instructors: The availability and responsiveness of instructors to online communication varies, depending on a number of factors such as the instructors' other teaching, research, service and advising schedules; the type and speed of technology access that instructors have when they are off campus; the nature of the course. Some instructors will respond to you at all times of the day and night, 24-7; some will reply within 24 hours, others will take 48 hours, or may not be available to respond to you over the weekend; some instructors are teaching 12 months of the year while others do not work over the summer. However, what you can expect is that each instructor will (a) respond to you in a timely fashion and (b) make clear to you, at the start of the course or when they begin working with you as your advisor, when and how often you can typically expect a response from them.

Based on the internal feedback and practices at external institutions, we recommend similar communications for cadets tailored for USMA. Language, similar to the example below, that gives an upper bound of when a cadet can expect to hear from an instructor and that cadets should not expect responses during evenings and weekends will help faculty set better work-life boundaries. In addition, tips such as video-recording AI sessions to share with the next cadet asking similar questions can eliminate the burden of repeating AI for individual cadets.

2.10 Cadets taking courses remotely should have hard copies of textbooks to promote efficiency in learning.

While e-textbooks may seem like the solution to providing cadets with resources necessary for success, cadets found it difficult to look at e-books online while all other course content was also online. This was not simply an issue of not having notes, but rather that cadets found it difficult to work with e-books due to extended screen time and looking up material all on the same screen. This statement was supported from responses to the end of semester cadet survey. Cadets were asked to provide open response to the question: "What capabilities or additional resources do you wish you had had to support your learning in the remote environment? What could have USMA done differently to support learning in a remote environment?" The most frequent bigram was "physical textbooks" (**Figure 8** above). The specific comments related to this bigram indicated that

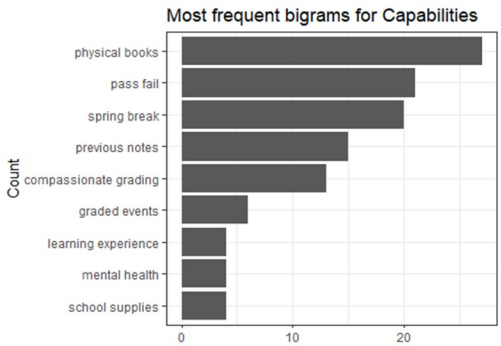

Figure 8: Cadets most frequent bigram was linked to the hard copy of the course textbook.

cadets preferred hard copies of the book primarily due to challenges reading content online and using the same screen for class meetings and looking at textbook content (see call out box left). The same sentiment was heard in the cadet focus groups.

Another important point is that cadets desired their class notes. Cadets could take notes electronically moving forward; however moving forward, individual faculty may have to change their classroom rules to allow computers in the classroom. Cadets in focus groups indicated that digital note taking was not permitted in some of their classes.

Comments from free response cadet surveys

"I wish I had more access to physical materials like textbooks as I learn best when I have something in front of me to highlight and physically hold."

"I personally prefer hard-copies over digital."

"I wish I had my hard copy books because the online books create problems and are tedious to work with sometimes"

"A digital textbook is not the same as a hard copy when everything is being done on the same screen of a single computer"

Feedback from Cadet Focus group interviews

Readings online made for a lot of screen time. It's much better to have hard copy books and paper materials. When everything is online and you must switch tabs on one screen, it makes it very difficult to complete assignments. Many people also did not have printers so they couldn't print things.

2.11 Sustain initiatives to promote cadet access to support services (Writing Center, Center for Enhanced Performance, Library) within appropriate remote teaching/learning platforms.

Academically at-risk students have a more challenging experience in online courses(20). Their performance is weaker and they are in danger of reduced or no engagement(21-23). In keeping with best practices in higher education(24), support services such as the Mounger Writing Center (MWC), CEP, and the library should sustain existing and COVID-responsive initiatives to promote cadet access. These include, for instance, developing and maintaining relationships with the Cadet Academic chain of command, integration into plebe orientation activities, and accessible, well-maintained web resources. Below is a summary of what each program currently has available, what was modified for the recent remote teaching experience and the direction the programs would like to go to provide stronger support for remote classes.

The West Point Writing Program requires all program-linked courses include syllabi inserts detailing the support available to all cadets through the Mounger Writing Center (MWC) and linking directly to the MWC website. The MWC will sustain efforts to reach academically at-risk cadets by coordinating Cadet Writing Fellow-led peer briefings in EN101/151 and, especially, EN100. A portion of these briefings is dedicated to ensuring all plebes have access to the MWC schedule; once signed up, they receive weekly emails detailing timely support available through the MWC. Historical data, as well as data collected after the MWC's COVID adjustments, indicate that these measures reach at-risk cadets. For instance, the percentage (20%) of unique cadet visitors who self-identify as not being confident in their writing ability—as well as the total number of appointments made by the same population (21%)—remained stable as the MWC transitioned to online, asynchronous operations.

"Librarians have a huge opportunity in the online space because their content or they themselves can be embedded in online classes…that takes some pressure off the faculty if a librarian is actually loaded into the course shell and is answering questions that librarians answer, but right in the classroom where all students in the class can…view the responses."

-Polly Smith, Associate Director for Online Learning, Utica College

The USMA Library is well-equipped to support the remote teaching environment due to its extensive digital resources and staff familiarity with various instructional technologies. The library's primary virtual service point consists of a chat software that pops up automatically on every library website page. In addition to chat, each liaison librarian has an individual virtual appointment link, where cadets and

faculty can request an appointment for research help. Each plebe is assigned to a personal librarian as part of the library's First Year Experience program.

On the remote platform, USMA librarians can conduct synchronous teaching in Teams or as a Teams Live event and asynchronous support by "embedding" in a course via Blackboard or Teams. In that online environment, librarians can introduce themselves to cadets as research experts, upload video tutorials, share important resources, and embed Credo Instruct information literacy modules at the cadets' research point of need.

The USMA Library remains an incredible resource for cadets to help cadets succeed in any environment, and the following are recommendations to enhance cadet engagement with the library and librarians:

- Faculty can contact their department's liaison librarian to facilitate and discuss embedded and virtual information literacy instruction to support their cadets' research.
- By embedding the library/librarian into Blackboard, library resources and one-click research help will be easily accessible.
- Faculty planning to require cadets to access a specific e-Resource should contact their library liaison as soon as possible, both for purposes of availability and funding for licenses.
- A pre-loaded library section should automatically rolled into each Blackboard course shell (or relevant LMS/digital environment)

The Center for Enhanced Performance (CEP) offers cadets one-one-one academic counseling as well as courses designed to promote academic achievement.

CEP provides course and service information briefings for all incoming cadets during cadet basic training, at the conclusion of which, new cadets are given the opportunity to enroll in CEP classes. Some cadets are mandated to enroll based on academic risk assessments. Additionally, the Student Success course is embedded into the Math Department's MA100 course and mandatory for International Cadets. Approximately, one third to one half of all cadets take at least one course in CEP during their plebe year. CEP has a Blackboard site detailing its services and courses which is provided to new cadets (see summary here).

The CEP also houses the Peer Tutor Program, which is comprised of 350 cadet tutors who offer fellow cadets one-on-one and group tutoring in courses across the curriculum. The Tutor Program Director works closely with Cadet Academic Staff and Program/Course Directors to facilitate study sessions and individual tutoring. Additionally, the CEP Tutor Program maintains a website, which allows cadets to request course-specific tutors and access study materials for various courses. The program is affiliated with the College Reading and Learning Association (CRLA) and offers cadets the opportunity to complete the requisite training for CRLA tutor certification.

The CEP's Performance Psychology Program continued to work with cadets in the remote environment to help them master the intangible mental skill to maximize their performance in all four pillars. They provided cadets stress and energy management techniques and tools through video tutorials and individual sessions. Performance Psychology trainers continued to focus on wellness, resiliency, and team building activities with the cadets and teams they habitually support.

Additionally, ODIA provides 5 Athletic Academic Support Coordinators (AASCs) who are housed in the CEP. In the remote environment AASCs utilized individual and group settings to assess cadet aptitude in online learning and developed individualized academic support plans for those cadets they support. They also observed environmental factors contributing to academic success and assisted in mitigating all challenges. AASCs regularly communicated with coaches and athletic administrators to update progress and ensure all appropriate resources were exhausted in supporting cadets' academic and emotional well-being.

Moving forward, the CEP plans to work in conjunction with Chief Information Officer and Blackboard specialist COL Ed Teague to develop a cadet remote learning workshop, which will be embedded in the Student Success Course. Additionally, the CEP and Tutor Program will continue to develop and bolster their websites to better accommodate cadet academic needs in a diverse learning environment.

CEP provides a highly attended company-level tutoring program that supplements the cadet company academic support plan. Studies have found that embedded tutoring services within an LMS or program can

help with retention and success of academically at-risk students(25, 26) . CEP does not currently have evidence that suggests the current Peer Tutor Program is not able to meet demand in the remote environment. Furthermore, since cadets who serve as tutors are volunteers, embedding tutoring services within an LMS may present challenges. Adopting a for-hire tutoring service like the Naval Academy may be worth piloting to support cadets on the remote platform. Another option to consider is to offer course credit to incentivize volunteer cadet tutors.

We did not have information linking sentiment and emotion to cadet academic standing; however, we were able to see evidence of negative sentiment (**Figure 9** below). There is a subpopulation of cadets that responded with negative sentiment and whose language used fear and sadness. The more evidence-based support we can provide, the more likely our cadets will advance with this support.

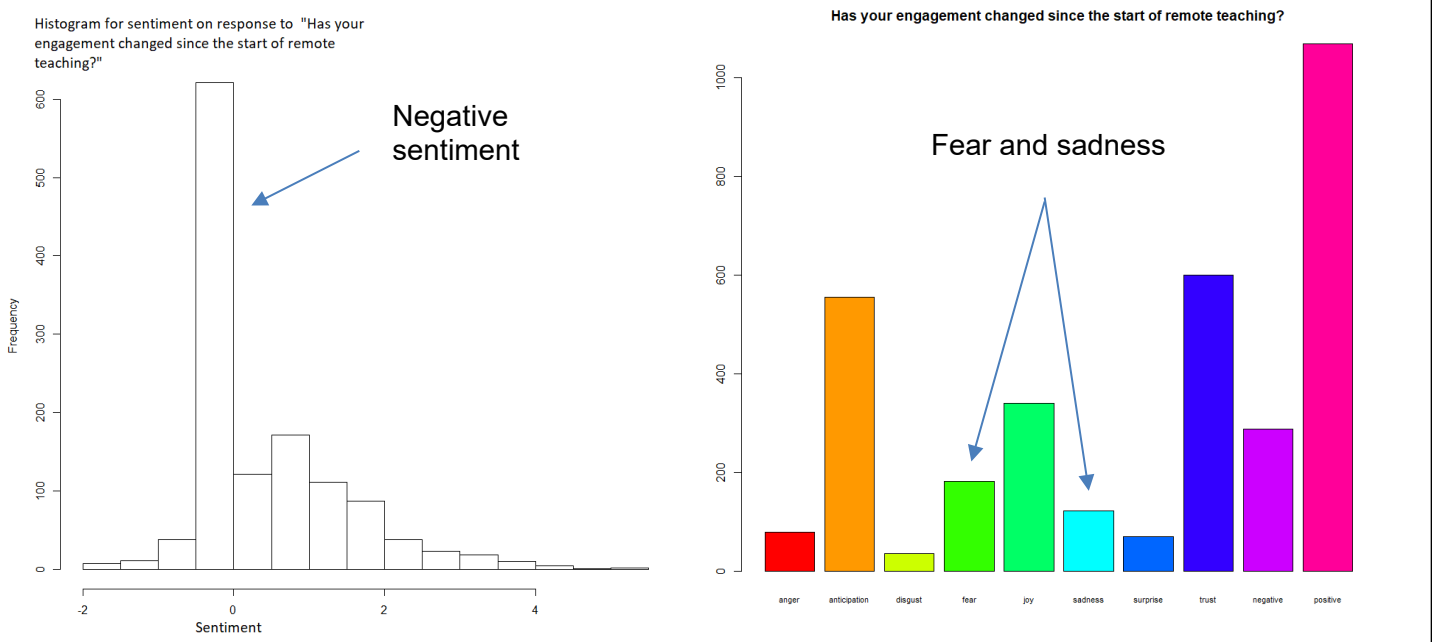

Figure 9. Emotions and Sentiment in Cadet End of Semester Survey

2.12 The institution should plan for and support distance education for cadets who are studying abroad or on frequent travel (cadet athletes). The institution should explore other distance education possibilities, such as delivering interactive content to cadet candidates and courses for ROTC and other service academies.

The departmental RFI had several suggestions for pursuing distance education. One suggestion mentioned several times was to design courses for cadets who are on a semester abroad. Another was to design courses for other service academies and ROTC. Finally, there was a suggestion of designing content for cadet candidates. From our interviews with benchmark institutions, the majority stated that good course design comes from careful course planning with appropriate support from instructional designers and IT (Brian Beatty, Associate Professor of Instructional Technologies, San Francisco State University at 33:29, Chad Topaz, Professor of Mathematics, Williams College at 0:52 and 5:55, Jenni Hayman, Chair, Teaching & Learning Innovation Hub, Cambrian College at 12:15, Joseph Tranquillo, Professor of Biomedical and Electrical Engineering & Director of the Teaching & Learning Center, Bucknell University at 20:56, Lydia Kyei-Blankson, Associate Professor of Education & Senior Research Fellow at NACADA, Illinois State University at 4:25, Maggie Debelius and Yianna Vovides, Director of Faculty Initiatives & Professor / Director of Learning Design and Research & Professor, Georgetown University, Mark Parker, Associate Dean of Continuing Studies & Associate Professor, Norwich University at 15:20, Michelle Roehm, Vice Dean & Peter C. Brockway Chair of Strategic Management & Professor of Marketing, Wake Forest University at 12:31, Mohan Venkatachalam, Senior Associate Dean, Executive Programs & R.J. Reynolds Professor, Duke University at 6:00, 19:33, 31:49, Shaina Rowell, Education Specialist, Center for Integrative Research on Cognition, Learning, and Education

(CIRCLE), Washington University St. Louis at 15:49, Yanling Sun, Director, Instructional Technology & Design Services, Montclair State University at 23:20).

Any distance education opportunity should also meet MCSHE and other appropriate accreditation criteria, such as ABET, *before* delivering to cadets.

2.13 What challenges do we face implementing recommendations and what can we do moving forward?

We close the recommendation section by acknowledging that the emergency remote teaching performed in AY20-2 was sudden and unexpected. Many of the experts from the benchmark institutions indicated that it could take up to a decade to gain full faculty acceptance and streamlined planning and execution of remote teaching challenges.

- Adapting West Point's environment and culture to incorporate remote teaching methods. This is a new teaching and learning modality and it takes time to learn and value the different benefits of remote teaching/learning.
- Basing teaching practices on the science of learning. Practices that deepen and increase student learning may not be intuitive. This is challenging.
- Academic Integrity in the remote environment. It is extremely challenging to develop assessments that increase student learning while decreasing academic dishonesty. It will take time for our institution to think through these challenges.

> "You want a great online course? You need an instructional designer, you need a faculty expert, a content expert, and then you need a great teacher. And they don't have to be the same person." Robert Halliday and Polly Smith, Senior Associate Provost, Dean for Graduate Studies / VP School of Online and Extended Studies & Associate Provost for Online Learning, Utica College

What can we do?

- Facilitate peer-to-peer training (at cadet and instructor level). The fastest way to learn new methods is from your peers.
- Educate ourselves by reading articles and books at the forefront of learning in higher education. Make books available and encourage faculty to read articles on new and best practices in teaching in the remote and face-to-face environments.
- Guest lectures in the field of higher education learning at the department level. Departments hosting an individual like Ken Bain will enhance and strengthen evidence based pedagogical practices.
- Encourage faculty to conduct high quality rigorous research in higher education that can be published in visible well-known forums like the Chronicle of Higher Education. Encouraging faculty to disseminate what we learn at USMA in recognized national forums will give us feedback and establish ourselves at the forefront of remote teaching.

3. RECOMMENDATIONS FOR FURTHER INVESTIGATION, EXPLORATION, AND NEXT STEPS

Online teaching and learning have been conducted at institutions of higher education for over two decades. Despite this, research has often focused on 1) individual courses with smaller numbers of students 2) graduate courses and 3) observational experience in a single section of a course. There is very little controlled research where one set of classes taught remotely (this includes hybrid, HyFlex and all remote modalities) is compared to classes that are taught face-to-face(8, 27-29). USMA has an environment where many aspects of a course have standardized structure and content giving USMA a unique opportunity to contribute to this research space while improving our own pedagogy. Here, we lay out several questions that can serve as research questions for Master Teacher Program Projects or investigator initiated FRF proposals in support of the outcome of providing intellectual capital for our Army and Nation.

Specific Research Questions

1. What do faculty think should be the outcomes of a culminating experience in a classroom? What different forms of assessment achieve these outcomes best?
2. How does cadet engagement change with an asynchronous component?

3. What strategies work best to engage and retain academically high-risk students in remote environments?
4. There is research on student athletes and enhancing academic time-management skills. There is also research on student athletes and what academic skills require more development (30-33). However, there is a knowledge gap on the overlap between these known areas and the interplay with remote teaching. What components of academic and time management skills can be transitioned to the remote platform with the same or better impact than in-person?
5. Does embedding peer-tutoring directly within LMS for a remote class increase peer-tutoring requests?

Piloting LMS and other Technology

We are currently piloting several different technologies and this experimentation should continue.

Developing Best Practices Information

Through development of our report, we have come across many evidenced-based best practices for remote teaching and distance education. The RTDL-BPWG is compiling these practices and developing strategies to disseminate this information to all faculty at USMA.

The way forward

It is imperative that we design and plan for remote teaching carefully and deliberately. The Deans Fellows for Remote Teaching will work this year to ensure that these initiatives move forward.

To update the faculty on our status, we would like to provide Faculty Council Updates to continue to discuss initiatives and findings from the Remote Teaching, Distance Education, and Distance Learning efforts.

4. STUDY QUESTION FINDINGS

Some of the points made in this section were made earlier to integrate with the recommendations, however we repeat them here to comprehensively address the study questions. Some of the content is new because at this time, the content could not be aggregated as a recommendation.

1.a What remote teaching techniques or practices should departments implement on a routine basis?

This question was primarily addressed through responses from the Departmental RFI, the Dean's off-site panel, and the faculty and cadet end of semester surveys (Cadets, Faculty). Faculty stated that they would like to implement the use of remote teaching or components of remote teaching for

1. Video lectures outside of class for asynchronous preparation.
2. AI
3. Cadets (especially cadet athletes) trip section
4. Guest Lectures
5. Code Red days (faculty can teach remotely)
6. STAP
7. Semester Abroad

Cadet athletes leveraging remote teaching during travel were suggested by several departments in the Departmental RFI. There is preliminary research that demonstrates remote teaching benefits college athletes (34); however, this delivery requires the support and attention already documented in the literature (30-33).

Additionally, in the remote environment, faculty reported holding increased guest lectures and opening these lectures for several classes or even the West Point community. Faculty also reported enjoying being more deliberate with cadet engagement during class time since lectures were moved to outside class-time. Faculty also reported enjoying meeting cadets for AI in a flexible remote environment; however, some faculty on the survey indicated this extended their day and imbalanced their home-work life.

Many of the best practices for remote teaching that were shared by benchmark institutions improved student learning while simultaneously balancing faculty workload. One of the top goals of the Remote Teaching

Distance Learning Best Practices Working Group (RTDL-BPWG) is disseminating these best practices to faculty in a streamlined manner.

1.b. What are the broad guidelines for their implementation?

Writing capabilities and discussion boards

From the faculty focus groups and the faculty surveys, we found that cadets need the same communication capabilities that instructors have. Faculty to cadet and cadet to cadet interactions form a valued part of our face-to-face classes. Ensuring that we continue to have them in the remote environment means that cadets and faculty are equipped with technology tools that make this happen. Faculty identified writing pads and drawing pencils as one of their top capabilities to augment remote teaching (see **Figure 10** to the right). Faculty and cadets also reported valuing discussion and using discussion boards (see **Figure 11** below).

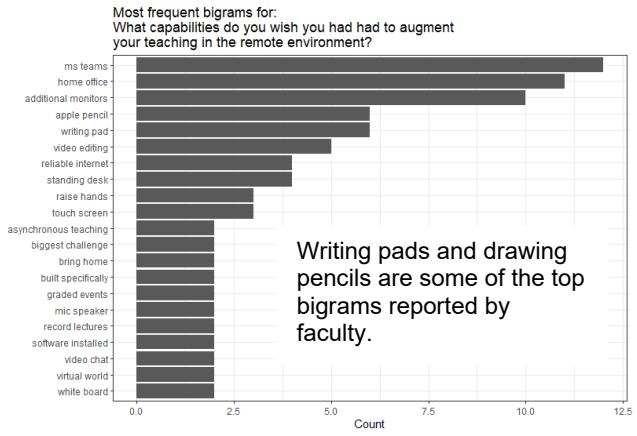

Figure 10. Bigram related to desired resources.

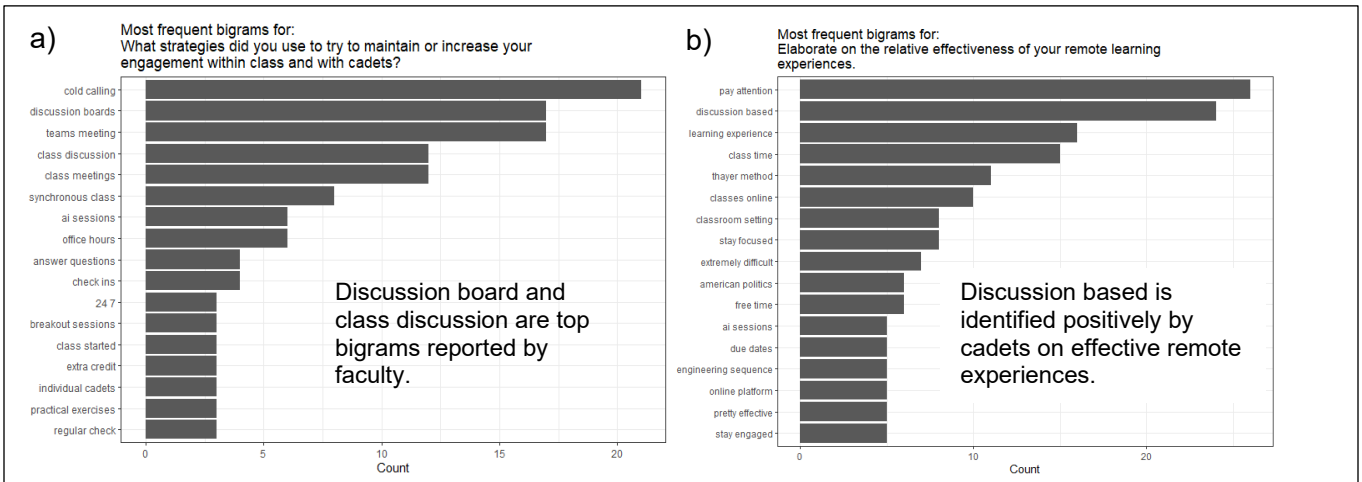

Figure 11. Bigrams related to (a) class engagement strategies and (b) learning experience.

AI guidance

Helping faculty set cadet expectations and letting faculty know that leadership feel that it is okay and even encouraged to log off may help faculty set boundaries. Other institutions have similar guidance for their online students which we discuss under a recommendation for AI guidance.

In addition, the RTDL-BPWG is setting up a weekly list of “teaching time savers” posted to a sharepoint site which may help reduce the amount of time faculty stay logged on. Time savers like recording AI sessions and sharing the recording with other cadets requesting AI can help reduce the potential for extended days.

2.a. What possibilities for hybrid and distance education should departments consider?

The data to address this question came from the Department RFI.

- In addition to developing courses for cadets who are on a semester abroad, faculty suggested that course offerings or other forms of military development could be open to cadets and mid-shipmen at other service academies.
- While the lab experiences were degraded in the remote environment, a department suggested we investigate how to implement the experiential component of courses (laboratories, demonstrations) as best

as we can in a remote environment. Some of the interviews we conducted with benchmark institutions spoke to this need (Chad Topaz, Professor of Mathematics, Williams College at 59:00, Jenni Hayman, Chair, Teaching & Learning Innovation Hub, Cambrian College at 2:48, Joseph Tranquillo, Professor of Biomedical and Electrical Engineering & Director of the Teaching & Learning Center, Bucknell University at 1:00, Ken Bain, President, Best Teachers Institute at 5:17). Most stated it was difficult to match with an on-site experience.

- Some products created to facilitate remote learning over the past semester may benefit ROTC programs or the operational force, specifically recorded mini-lectures related to the topics of character and Officership.

2.b. What parameters should govern or bound that consideration?

The Department RFI had a suggestion that every cadet should be required to complete a specified portion of at least one course as a distance-education course. Each major can design this experience into one of their required courses. The panel discussion that followed at the Dean's off-site indicated that departments felt there should not be a limit to how many courses a cadet can take remotely, however, faculty felt that cadets should limit their STAP courses to one remotely. This was due to the demand and shortened time of STAP.

2.c. What aspects of the 47-month experience cannot be hosted online?

To answer this question, we used the *West Point Leader Development System (WPLDS)* Developing Leaders of Character and the Futures Operational Planning Team (OPT) rollup of every activity by directorate. These activities are categorized by either critical, essential, enhancing, or ancillary. We also evaluated the responses to the question "Are there any gaps in learning that occurred because of our shift to remote learning that need to be addressed during AY21?" from the Department RFI.

WPLDS is defined as the purposeful integration of individual leader development and leadership development experiences across a cadet's 47 months, within a culture of character growth. To answer the above question, Table 2 within Developing Leaders of Character, which describes the "critical" WPLDS core development experiences for every cadet, was first considered. These experiences are absolutely necessary to execute the USMA mission and to achieve the desired WPLDS outcomes. Table 2 categorizes these critical experiences into three areas, each of which are shown below. Also shown below within each area are those experiences that cannot be hosted online:

1. Individual Leader Development
   - Cadet Basic Training (CBT) and Cadet Field Training (CFT) Skills (Military Program)
   - Cadet Leader Development Training (CLDT) Skills (Military Program)
   - Army Combat Fitness Test (Military Program)
   - Military Individual Advanced Development (Military Program)
   - Indoor Obstacle Course Test (Physical Program)
   - Boxing and Combatives (Physical Program)
   - Military Movement and Survival Swimming (Physical Program)
   - Lifetime Physical Activity (Physical Program)
   - Physical Individual Advanced Development (Physical Program)
   - Competitive Sports (Physical Program)

2. Leadership Development (Practice Following and Leading experiences that are not specific to any one of the four development programs)
   - CBT and CFT Member of Squad (Military Program)
   - Summer Leadership Detail (Military Program)
   - CLDT Patrol Leader (Military Program)
   - Company Member of Squad, and Team Leader and Cadet Chain of Command Responsibilities
   - Cadet Troop Leader Training

3. Culture of Character Growth
   - Cadet Sponsorship

An analysis of the above indicates the significant amount of physical and military individual development and leadership development, that cannot be replicated in an online environment.

What further establishes West Point as the preeminent leader development institution in the world are the numerous enhancing and ancillary experiences provided to cadets. These development experiences optimize the achievement of the WPLDS outcomes but not doing them does not result in mission failure. In a constrained environment; however, these activities could impact USMA's ability to execute the critical experiences.

During the past few weeks, the Futures Operational Planning Team (OPT) developed a rollup of every activity by directorate. These activities, which include both cadet development and those that are not related to cadet development, are categorized by either critical, essential, or ancillary. The critical activities align with those described in Table 2. As can be seen in this Enclosure, there are approximately 150 critical, ancillary, and enhancing activities. Based on a review of these activities, the following ancillary and enhancing activities pertaining to cadet development, cannot be hosted online (note that these are in addition to the critical activities highlighted above):

- USCC (BTD): Plebe duties; Drill; Sandhurst; and Tunnel to Towers
- USCC (BTD): Plebe duties; Drill; Sandhurst; and Tunnel to Towers
- USCC (DPE): Company Athletics; Competitive Club Practice/Competition; and Brigade Opens
- USCC (DCA): Military Club Practices and Competitions; Club Night; Plebe Halloween Party; Ring Banquet; Wine Tastings; and West Point Triathlon

The review concluded that all critical, essential, enhancing, or ancillary activities conducted within the Dean's directorate can be hosted online, although the effectiveness of some likely would be degraded.

Finally, responses in the Department RFI indicated that Advanced Individual Academic Development (AIAD), Military Individual Academic Development (MIAD), and Physical Individual Academic Development (PIAD) programs may not be possible or be degraded. In addition, while great adjustments were made to still hold laboratory experiences online, these experiences were severely degraded. In addition, engineering classes that require hands on work like shop work in ME403 were also degraded.

3. What capabilities need to be retained or procured to support the remote teaching and distance education objectives determined in 1 and 2 above?

To address this question, we used the answer to the question "What capabilities or additional resources do you wish you had had to support your learning in the remote environment? " on faculty and cadet surveys (Cadets, Faculty), and the response to the Department RFI question, "What capabilities should the Academy retain and procure to support remote teaching and online education?" We also used information regarding purchase requests by departments through FLICR and feedback from benchmark institutions. We specifically asked institutions what they considered as minimal technology needs to conduct online classes. From these sources, we learned:

1. *All* remote teaching relies on reliable connectivity. Both cadets and faculty require reliable continuous internet connections for remote teaching/learning. A repeated concern was poor internet connectivity connections for cadets and faculty (see statements in call out box on the next page). USMA's IT does not have the ability to directly improve connectivity in a faculty member's or cadet's home, although some benchmark institutions schools have sent mobile hotspots to students with poor internet connections (Maggie Debelius and Yianna Vovides, Director of Faculty Initiatives & Professor / Director of Learning Design and Research & Professor, Georgetown University at 35:00, Michelle Roehm, Vice Dean & Peter C. Brockway Chair of Strategic Management & Professor of Marketing, Wake Forest University at 40:58). However, the USMA connectivity may be of concern when cadets on quarantine are connecting to the wireless to attend classes remotely. The only part of the network at USMA that was not upgraded during the building of the WREN was the wireless infrastructure. The institution has a plan to upgrade wireless technology, but does not have sufficient funding to execute this plan in the near term. Upgrading the wireless infrastructure in fundable increments is a potential method to meeting this need. There is wired connectivity available in all cadet barracks rooms that should be sufficient to support remote teaching, but that level of connectivity is not available in classrooms.

Faculty Remarks on Connectivity

"A major challenge for many cadets this semester was lack of good working environment at (parents') home and spotty internet connection."

"…A dedicated office at home and more bandwidth…"

"Reliable internet connections for all members of class."

"More reliable internet service for on base housing."

Cadet Remarks on Connectivity

"I wish I had better internet service, my notes, and my textbooks."

"Have internet that works and is reliable."

"I would improve the reliability of my internet connection."

"the requirement of a Lockdown Browser comes across as an untrusting (and ineffective move) that only slows down test taking and disadvantages those with unstable internet connections (as lockdown browser consistently underperforms average internet performance)"

2. Faculty and cadets want technology capabilities that let them interact with each other. This is evidenced by the free response text where faculty and cadets identify discussion boards, hand-raising, and breakout rooms as the top reasons for remote teaching/learning effectiveness and reasons for platform preference. Also, the faculty end of semester survey indicated a pen and writing tablet as two of the top desired capabilities.
3. Faculty may need components of a HyFlex classroom (Avatar Systems) to simultaneously deliver in-person classes to cadets who are on trip section, a semester abroad or isolated in quarantine. These systems involve classroom cameras, microphones and screens at a minimum. A common capabilities need reported in the Department RFI was cameras and microphones in the classroom.
4. There are widely differing technology needs depending on department. Additions to the listed capabilities above, the purchase requests by individual departments varied greatly. For example, some departments (e.g., departments that write formulas in lectures) needed high precision pen and tablets. Some departments that require students to see different displayed materials rely on document cameras. These examples are not exhaustive.
5. We need the capacity for editing and hosting videos: Cadets and faculty valued asynchronous videos (see **Figure 12** on the next page where recorded lectures were the second most frequent bigram in the response to the question "What was effective in promoting self-directed/independent learning"?). We need a place to store videos for asynchronous classes and for recordings of synchronous or in-person classes. This can be done with file uploads to the LMS, but video uploads that exceed our usual space requirements may cause the system to crash. Other institutions use video storage technologies like Kaltura and we are using Microsoft Stream. Effective use of Microsoft Stream may require some training. Some faculty requested video editing software. Well edited and produced videos have been known to be effective for learning (35, 36) and training provided as a video tutorial by the RTDL-BPWG would fill this gap.

6. Effective pedagogy is far more important than the technology used to enable it. We asked benchmark institutions what they feel is the most important technology for effective remote teaching. All who were asked this question responded that it is more about what you want your students to be able to do and finding the technology that enables obtaining those objectives versus having technology drive your teaching (Jenni Hayman, Chair, Teaching & Learning Innovation Hub, Cambrian College at 17:00, Joseph Tranquillo, Professor of Biomedical and Electrical Engineering & Director of the Teaching & Learning Center, Bucknell University at 2:32). Some frequently mentioned best practices that we have already compiled are here.

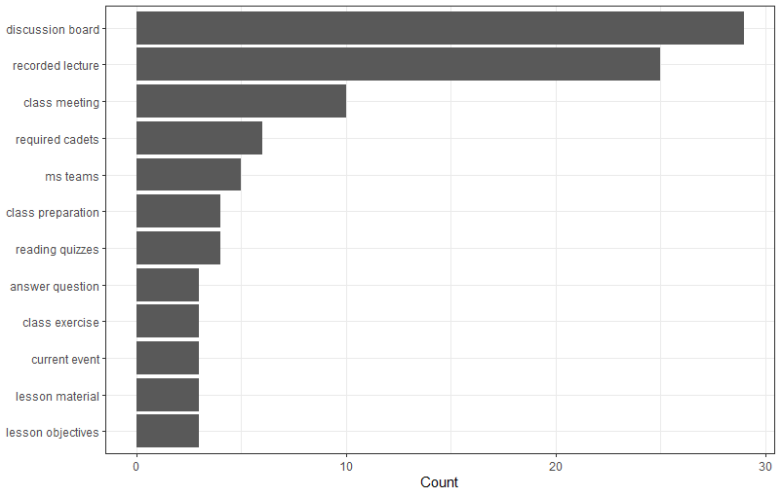

Figure 12. Bigram addressing impact on independent learning.

7. Course structure needs to be consistent, and digital assignments need to follow principles of good "packaging" and integration into calendar applications. Cadets and benchmark institutions expressed student preference for organization and consistency for finding information about their courses. (Cadet Focus Group, Maggie Debelius and Yianna Vovides, Director of Faculty Initiatives & Professor / Director of Learning Design and Research & Professor, Georgetown University at 43:37). Interviews with experts in online education stress that a common structure to courses is important. This is often achieved through course templates or frameworks (e.g. Quality Matters) (Robert Halliday and Polly Smith, Senior Associate Provost, Dean for Graduate Studies / VP School of Online and Extended Studies & Associate Provost for Online Learning, Utica College at 13:20, Brian Neff and Rob Flaherty, Electrical and Computer Engineering Department Head / Associate Dean for Center for Educational Innovation, United States Air Force Academy at 12:00, Donnie Horner, Provost Emeritus and Professor of Management, Jacksonville University at 39:37). Different tasks require different platforms. No school that we interviewed has only one platform for all digital content. A common solution is to have a suite of around three programs (e.g., Office 365, LMS, and Zoom) that the university supports with anything external being the responsibility of the individual faculty member to teach and support (Bill Balint, CIO, Indiana University of Pennsylvania). It has been strongly recommended that we don't use different platforms to accomplish the same function (Donnie Horner, Provost Emeritus and Professor of Management, Jacksonville University at 51:25). Several experts stated that using multiple platforms isn't the real problem (Jenni Hayman, Chair, Teaching & Learning Innovation Hub, Cambrian College at 26:23, Bonni Stachowiak, Dean of Teaching and Learning, Host of the Teaching in Higher Ed Podcast, Vanguard University). Faculty use different programs for different tasks all the time, and they rarely work on multiple assignments at the same time (Mark Parker, Associate Dean of Continuing Studies & Associate Professor, Norwich University). It's not knowing where to find information (Mark Parker, Associate Dean of Continuing Studies & Associate Professor, Norwich University) or bouncing between programs for the same task (Mark Parker, Associate Dean of Continuing Studies & Associate Professor, Norwich University). Detailed instructions should be posted in many places (Robert Halliday and Polly Smith, Senior Associate Provost, Dean for Graduate Studies / VP School of Online and Extended Studies & Associate Provost for Online Learning, Utica College at 31:12)

8. There are minimal institutional technology needs, but they vary based on the needs of an institution. During our benchmark institution interviews, we asked what they considered minimal technology needs to support remote education. The responses varied greatly between institutions and therefore we believe the same to be true for our institution.

4.a. What policy changes, resourcing, personnel considerations, and education are required for implementation?

Here, we relied on data from the Departmental RFI and the panel discussions. We also relied on feedback from the benchmark institutions and the faculty focus groups. A summary of our findings are categorized below:

Policy

- The Documentation of Academic Work (DAW) needs to be updated to include language and the environment of remote teaching/learning. It should include a revised eAcknowlegment statement.
- Policies on Fair Use and eBook licenses should be reviewed and/or updated.
- Departments were requested to give clear guidance on take-home tests for their faculty.
- The institution should relook/codify their length of duty day and specific duties for teleworkers.
- The institution should develop a policy on AI for the remote environment.
- The institution should develop a policy about recording class meetings.
- The institution should relook/update the attendance policy for the remote environment.
- The institution should add language to include expectations of cadet appearance, dress and conduct in remote classes.
- The institution should develop policies for Honor and Academic Freedom in a remote environment.
- The institution should consider creating a set of Guidelines for Remote Teaching, including topics such as: classroom management and expectations.
- The institution should develop a continuity of operations plan and within this plan, there should be guidance on how to prepare a "to-go bag" of academic supplies when cadets and faculty depart the institution.
- Easily accessible best practices on how to study (cadets), teach (faculty) and give graded assessments (faculty) in the remote environment need to be prepared.
- The institution should develop guidance on upper and lower bounds for synchronous remote class meetings.

In terms of synchronous meetings, there were several suggestions on how to account for course credit. One suggestion was to move all (or more) classes to the 30 lesson/75 minute format as it takes longer to prep for remote training, and longer to work through challenging topics in this format. Higher education pedagogy expert, James Lang, Professor of English & Director of the D'Amour Center for Teaching Excellence, Assumption College, in his interview suggested having fewer synchronous meetings (once a week). A similar balance was also suggested by Meg Benke, Empire State College's Provost and Executive Vice President for Academic Affairs and Secretary for the Middle States Commission on Higher Education. On the other hand, faculty requested that USMA should formalize 'on-time attendance' standards to make it clear to cadets (and instructors) what is expected. This policy will take time to develop and we suggest that the current Dean's Fellows for Remote Teaching work with the Dean's Fellow for Policy to plan and tailor guidelines that are flexible yet provide clear boundaries.

Education

- Ethical behavior in the remote environment should be included in cadet ethics training.
- Faculty and cadets require training for teaching and learning in the remote environment (see our earlier Training Recommendation).

Resource and personnel to support planned remote and distance education

The following are mentioned in our recommendations:

- Additional IT support staff and instructional designers are important for quality course design and execution.
- Data bandwidth increased enough to support remote teaching/learning.
- Providing support for a home office so that remote teaching can be delivered off-site.

The following additional needs were identified by IT to support classes in a remote environment:

- Civilian 2210 IT positions were reduced in a non-remote environment with the idea that some departments would not have as much need as others. This has changed with remote teaching and our IT needs are more balanced and increased across departments.

- A Vice Dean for IT position would facilitate and advocate for IT issues at the Dean's level. Currently, departments advocate these needs/concerns for themselves.

4.b. What is the appropriate pacing for the implementation of various proposed changes?

We asked benchmark institutions what timelines we can expect. There is the timeline to acquire technology, but there are also timelines involved for shifting perceptions and institutional culture. The first perception is that the remote platform should be used to directly transition face-to-face structure. Even with training and guidance, many faculty still initially try to adopt face-to-face strategies. Robert Halliday and Polly Smith, Senior Associate Provost, Dean for Graduate Studies / VP School of Online and Extended Studies & Associate Provost for Online Learning, Utica College at 19:20 stated it takes about 4-8 weeks for faculty to recognize that replicating a face-to-face course online generates unsustainable faculty burden and does not achieve learning outcomes well.

4.c. At what pace do other peer and aspirant institutions proceed in like expansions?

Several institutions stated that the culture change required to accept online teaching and more importantly, value what interactions and outcomes online teaching can achieve takes a long time. This phenomena has also been documented in the literature (37). There are several unfounded assumptions that faculty hold that can be difficult to overcome. First, the assumption that "face-to-face is best" is a deeply held belief. This assumption is invalid on several fronts. When it comes to student performance and student evaluations, research on direct comparisons of online courses demonstrates no statistical difference between modalities (28, 38, 39). Student engagement can also be *enhanced* on remote platforms. In a face-to-face setting, a few voices can dominant discussion. Deliberate and constructed discussion using discussion boards and other remote tools can increase engagement for all students (Steve Misuraca, Asst Dean of Students for Full-Time MBA Program, Duke University at 30:13.), thereby democratizing the classroom. Second, there is an assumption that what we already do in the face-to-face classroom is effective, which may be invalid (see quote from Bonni Stachowiak above). Taken together, it can take time, on the order of years, to change these perceptions among faculty. On the other hand, most faculty responses on the end of semester survey that piloted remote teaching and were positive about the experience evidenced by our sentiment analysis on the free form responses to questions on the end of semester faculty survey. Many faculty reported on the faculty survey that they innovated during the past experience with remote teaching. Moreover, they stated they will continue these new practices even when they return to face-to-face teaching. These experiences combined with training through multiple pathways could speed up change in perceptions.

> "These results indicate that, given the large scale university level, multi course, and student framework of the current study, there is little to no difference in grade based student performance between instructional modes for courses where both modes are applicable." (14)

> So when you try to take that…and try to put it online, a lot of people assume that they're…taking something that is effective, and that is a false assumption. (Bonni Stachowiak, Dean of Teaching and Learning, Host of the Teaching in Higher Ed Podcast, Vanguard University at 2:13)

5. METHODOLOGY

The methodology followed to inform this report involved taking the lead of the Remote Teaching and Distance Education Working Group initially established with leadership from COL Ray Kimball, Chief of Faculty Learning, Innovation, Collaboration, and Research (FLICR) which serves as both the internal and external face of the Dean's Major Activity or Directorate (MAD) for engagement about teaching and research.

5.1 Survey Analysis

The results of the faculty survey analysis are available here. The results of the cadet survey analysis are available here. The findings from the cadet AY20-2 end of course survey are available here.

Statistical Analysis All survey analysis was performed in the statistical software package, **R** (**R** Core Team 2013). For sentiment analysis and text mining we applied sentiment and text mining packages and libraries available through R**.**

Cadet and Faculty remote teaching/learning surveys There were two survey sweeps of both cadets and faculty conducted during the AY20-2 remote learning experience. The first sweep (Cadets, Faculty) was conducted three weeks after the initiation of remote teaching and the second (Cadets, Faculty) was conducted at the end of AY20-2. We primarily focused on end of semester feedback. A total of N=1353 cadets and N=340 faculty responded to the end of semester survey. Some analysis of the categorical question responses (e.g., Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree) were provided as pie charts in Microsoft Forms and while

Table 3. Free Response Questions on Remote Teaching End of Semester Surveys
Cadets
1. Why did you prefer that learning platform? What specifically made this platform your preferred remote learning modality?
2. Use the space below to elaborate on the relative effectiveness of your remote learning experiences.
3. Has your engagement changed since the start of remote teaching? If so, what factors impacted your engagement?
4. What strategies did you employ to try to maintain and/or increase your engagement with your courses and with others?
5. Please share some examples of how you responded creatively, or not, to the remote teaching environment.
6. Please elaborate on changes made or not made in your classes following the compassionate grading email.
7. What would you do differently to prepare for learning remotely?
9. What capabilities or additional resources do you wish you had had to support your learning in the remote environment? What could have USMA done differently to support learning in a remote environment?
Faculty
1. Why did you prefer that learning platform? What specifically made this platform your preferred remote teaching modality?
2. How have you been providing feedback to cadets on their progress within your courses?
3. Please share examples of changes that you may have made based on the Dean's compassionate grading communication.
4. What factors influenced your choice in the question above? What factors were within your personal control, what could USMA have assisted with, and what was beyond our sphere of influence?
5. How has your engagement changed since the start of remote teaching? What factors influenced that change?
6. What strategies did you use to try to maintain or increase your engagement within class and with cadets?
7. Please share any activities that you felt were particularly effective in promoting self-directed/independent learning by the cadets.
8. Please share any of the creative ideas you developed due to teaching remotely
9. Please provide examples of the rationale cadets used to make the request (NC,W).
10.Do you have any feedback regarding the new Cadet Alert System?
11. How has teaching in the remote environment changed AI (if at all)?
12. What method of communication was used with the TAC and what types of issues were communicated?
13. Have the alternatives to TEEs provided this semester changed your views on the functionality of final exams and if so how?
14.What capabilities do you wish you had to augment your teaching in the remote environment?

they provided information on how the majority of cadets or faculty felt about remote teaching/learning, they provided little detail on how or why selections were made. More revealing were answers to free response questions (**Table 3** previous page).

Sentiment Analysis From these free responses, we calculated a sentiment score for the Cadet Question 3 and Faculty Question 5 (**Table 3** previous page). A sentiment score uses R's word library to identify the number and degree of positive words and negative words by a respondent. Positive words score above 0 and negative words score below 0. The positive score minus the negative score assigns an overall sentiment score to the response. Additionally, a bar chart of overall emotions can be developed with the sentiment package (see **Figure 9**).

Most Frequent Bigrams Word clouds can display the most frequently used words. However, we wished to calculate the most frequently used bigrams because many words in a sentence are paired such as "calendar invite" or "discussion board". A chart of top 11 bigram frequency (Cadet, Faculty) was developed for each free-response question.

Cadet Course End Feedback Course end feedback AY20-2 consisted of N=12,200 observations and included 9 questions on the remote teaching/learning experience. All questions were answered on a standard Likert Scale. We binned the responses into categories of "Yes" for strongly agree and agree and "No" for strongly disagree and disagree and neutral remained neutral.

Table 4: Questions involving Remote Teaching/Learning on AY20-2 Cadet Course End Feedback
My Instructor made effective use of an online platform for instruction and collaboration.
Graded events (WPR's, Projects, Papers, TEE's, etc.) in this course were effective and fair in the remote environment.
I took more responsibility for my own learning in this course as a result of switching to a remote learning environment.
I was able to maintain my attention in this course during remote class sessions to the same extent as in-person classes.
My instructor used an effective blend of techniques during remote classes.
I had to work harder in this course to achieve a similar amount of learning because of the transition to a remote environment.
I had to spend more time in this course to do the work required in the remote environment.
Participating in remote learning made me want to continue to learn on my own at USMA and beyond.
I had to spend more time in this course to do the work required in the remote environment.

Additional analysis was performed to compare responses on common questions to AY20-1 and AY20-2. This analysis involved evaluating the histogram of responses and comparing means, however, we note that while this analysis provides insight, statistically rigorous comparisons should be performed using multinomial modeling.

5.2 Department RFI

A department request for information (RFI) was administered in June 2020 after the semester of remote teaching was completed. This request consisted of the following 7 questions (**Table 5** (next page)). To identify common patterns and themes, the responses were reviewed and summarized into an Excel spreadsheet.

Table 5: Questions posed to departments in a department request for information (RFI)
What remote teaching techniques and practices do you want to sustain or implement?
What possibilities for distance education do you want to pursue?
What capabilities should the Academy retain and procure to support remote teaching and online education? Capabilities should not be expressed as a specific platform, but as tools and mechanisms that are enabled by platforms.
What resources, policy changes, or personnel changes are needed to support remote teaching and distance education?
What means have been employed to capture remote teaching lessons learned and how are those shared throughout the Department?
Does your department have a lead instructor identified as the distance learning proponent? Would they be available to participate in/help form a Remote Teaching and Distance Learning Best Practices Working Group?
Are there any gaps in learning that occurred because of our shift to remote learning that need to be addressed during AY21?

5.3 Dean's Off-site Panel Discussion

The variation in the responses from the Departmental RFI was greatest on Question Number 4. We took the responses from individual departments and transformed these responses into questions for a panel discussion held at the Dean's Off-site on June 4, 2020. The panel was formed with representatives from four departments that held the greatest variation in the written responses to the Departmental RFI. The questions posed at the off-site follow:

Table 6: Questions posed to Dean's off-site panel
What do you feel were the best and unexpected outcomes of our recent experiences with remote teaching?
Live classes have time-specific meetings. The majority of feedback from cadets and faculty in the remote environment is a blended mix of asynchronous and synchronous meetings. How should "required class time" be adjusted to meet the desired remote environment. What if any combination of asynchronous and synchronous should be required?
There was a learning curve for emergency remote teaching. Moving forward, should every major have a portion of their class delivered virtually? What are the other benefits of having cadets exposed to virtual/remote interactions?
We used to leave the office in the live environment. How do we effectively respect personal time of instructors since the remote environment has less time-imposed borders? What do you see as the potential tiered effects of some instructors choosing to give AI in the evening during ESP and some instructors unable to do so?
Should class sizes for remote teaching/learning be larger/smaller or stay the same?
If we decide to continue holding some classes (STAP for example) remotely, should there be a bound on the number of courses a cadet can take remotely?
Many departments wanted videos to be kept on for maximum teaching benefits (seeing facial expressions) and building community. Should there be a policy that cadets should keep their videos on during synchronous meetings? Should there be a policy on cadet etiquette when attending remote classes (even if not on video)?
Should remote teaching techniques, tips, and resources be part of new instructor training? Should West Point invest in education for faculty (masters in or take certification courses in) distance education? Should West Point invest in a Center for Remote Teaching Excellence?
What changes to the DAW do you think should be updated to encompass the remote environment?
What do you think about sharing online courses between service academies and to ROTC?

The responses to the Panel Discussion were summarized in a document.

5.4 Focus Groups

Cadet Focus Groups Cadets who filled out the surveys at the end of spring semester had the option to provide their names for further feedback. From this information, two focus groups were formed and met: one focus group consisted of cadets who self-identified as having struggled in the online environment and one of cadets who self-identified as having been successful in the online environment. A third focus group of cadets who self-identified as having struggled was also formed, but the meeting invitation was not attended by the cadets.

Faculty Focus Groups Departments were sent a survey asking faculty who were interested in participating in the focus groups to respond. Enough responded for two focus groups to be formed: one of senior faculty and

one of junior faculty. Both groups had a combination of STEM and HSS faculty and both had a combination of civilian and military faculty members.

Questions for the Focus Groups Questions were developed to elicit a free-flowing discussion from all groups regarding their positive and negative experiences with remote learning. We specifically asked about reactions to the learning platforms (Teams v. Blackboard), synchronous versus asynchronous structures, resources needed (both technological and otherwise), and time allocation. For the cadet groups, we asked for feedback regarding why they struggled and/or succeeded during the spring semester: what practices, technologies, habits, environments, teaching styles helped for their ability to succeed? We asked this question in a number of different ways for both groups. For the faculty groups, we asked for feedback on working from home and particularly childcare and home-schooling challenges. In all groups, we invited the participants to share any other ideas or concerns that they had regarding their experiences last spring and to make suggestions to improve the fall semester experience.

The responses were summarized (Cadet, Faculty).

5.5 Benchmarking External Institutions

The committee reached out to a set of external institutions and experts to learn about their experiences in coping with the impact of the pandemic in the Spring, and their perspectives on how to anticipate challenges in the coming Fall. First, we reached out to get input from all service academies, given their similarities in education and development goals. Beyond academics, service academies place a great deal of importance on physical training and character training that is connected to the profession of arms, something that traditional universities do not have. Peer institutions targeted for outreach and engagement include those from AY2020's approved "peer" and "aspirant" list maintained by the Office of Institutional Research. Among those contacted, we secured at least one interview from Duke University, Amherst College, Wake Forest University, Bucknell University, and Georgetown University. We also included discussions with institutions where knowledgeable contacts were known by the committee members (Towson University, Montclair University, Norwich University.)

Additionally, the committee conducted targeted interviews with individuals based on the following topic areas:

- Those with experience in online techniques
- Pedagogy specialists
- Educational technology experts
- Experts in the HyFlex model of education delivery
- Academic integrity

A full list of institutions we interviewed can be accessed here. Each interview was coded for important points and a time stamp to identify the location in the video where it can be found.

5.6 Course End Memos

Course end memos for AY20-2 were reviewed for every course and every department. Because there was wide variation in the responses, the results from this review were difficult to summarize. Patterns and groupings were performed to categorize perceptions of the remote teaching experience.

5.7 Literature Review

A literature review of research in online learning/distance education was performed in the Education Resource Information Center (ERIC) database using combinations of keywords "online", "distance education", "remote education" "comparison", "face-to-face", "asynchronous", "synchronous", "at-risk students", "building communities", and "student engagement". The results of these searches were screened for studies that incorporated controlled comparisons or meta-analysis/review papers. The papers were screened and summarized for quality and content.

In addition, members of the working group read books on effective online/distance education (40), HyFlex classrooms (41), academic integrity (42) and best teaching practice in higher education (13).

Finally, Hanover Research prepared a report for USMA which informed choices for benchmark institutions to interview and best practices avenues to pursue.

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