DISTANCE LEARNING QUALITY GUIDE

NAVAL POSTGRADUATE SCHOOL
GRADUATE EDUCATION ADVANCEMENT CENTER

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Introduction

The purpose of the Distance Learning Quality Guide is to help everyone involved in distance learning at the Naval Postgraduate School (NPS) provide engaging, effective, and student-friendly learning experiences. Developed by the Graduate Education Advancement Center (GEAC) as part of the Distance Learning Quality Initiative, this guide is designed to help faculty, support staff, and administrators apply essential principles and best practices for distance learning to the mission and unique circumstances of teaching and learning at NPS.

The Challenge of Quality Distance Learning

Distance learning, including courses delivered in synchronous, asynchronous, and blended formats, is a major part of the educational enterprise at NPS. In 2019, NPS students could complete over 70 graduate degree and certificate programs via distance learning, and 43% of NPS students enrolled in at least one distance learning course. These numbers will grow as NPS academic units develop new programs to serve the educational needs of the U.S. Armed Forces and civilian government agencies. The Department of the Navy’s Education for Seapower report (2018) found that a majority of naval officers now complete their educational career requirements through distance learning. This finding is consistent with current and projected global trends in the growth of distance education (Seaman et al., 2018).

Assuring the quality of distance learning is therefore a vital part of the NPS mission. While there are many dimensions to the quality of courses offered via distance (Baldwin & Trespalacios, 2017; Online Learning Consortium, 2019a; Quality Matters, 2018), they can be summarized as three crucial features: simply put, quality distance learning is organized, interactive, and considerate of learners’ needs. These are, of course, essential features of good teaching which the faculty and staff of NPS work hard to provide for all students. Programs at NPS encompass a great variety of academic disciplines, as well as diverse students, faculty, and government sponsors. While all programs can draw upon the same central services—such as the Dudley Knox Library (DKL), Information Technology and Communications Services (ITACS), and GEAC—all have different requirements for serving their students. Most programs at NPS deliver distance courses through the Sakai learning management system (or LMS, often referred to at NPS as the Collaborative Learning Environment, CLE). The Center for Homeland Defense and Security uses custom Courses and Thesis sites, and a few courses use video teleconferencing for live sessions. The Distance Learning Quality Guide does not call for uniformity or conformity among all programs. The guidelines do, however, emphasize consistency within each program in terms of site design and navigation, access to technical support, and other course quality features.

Even the most experienced educators often find it challenging and time-consuming to create effective and engaging learning experiences for distance learners (Lehmann & Chamberlin, 2018). The many challenges to teaching and learning from a distance include:
• **Little or no face-to-face contact between teachers and students.** The most obvious feature of distance learning has two especially challenging impacts. First, absent face-to-face contact, it is more difficult for students to maintain their attention on instructors, and vice versa (Szpunar et al., 2013). Second, it reduces or removes the critical non-verbal elements of communication. Information crucial to developing relationships between teachers and learners that is usually conveyed by facial expressions or tone of voice must instead be communicated via email, discussion boards, or chat (Bolliger et al., 2014; Darby & Lang, 2019).

• **The need for detailed design and advance planning.** Opportunities for mentoring, coaching, and meaningful learning don’t happen naturally when teachers and learners are separated by time and space (Boling et al., 2012; McQuiggan, 2012; Nilson & Goodson, 2018).

• **Slow (or absent) feedback loops.** In distance settings, instructors may only learn at the end of a course (if ever) if an innovation has succeeded, if more explanation of content was needed, or if a joke was actually funny (Orcutt & Dringus, 2017).

• **The change in instructor roles.** While the teacher’s content expertise is always vital, distance learning requires students to take a more active part in organizing and directing their own learning, and instructors must trust them to do so. This requires both teachers and learners to adapt to the change in the instructor’s role from “sage on the stage” to “guide on the side” (Gering et al., 2018).

**Guidelines for Quality**

While there is widespread agreement on the essential features of quality distance learning, every institution must tailor its distance courses and programs to its unique setting and mission, the needs of its students and faculty, and available resources (Baldwin, Ching, & Hsu, 2019; Hamlin & Williams, 2019). The core of the NPS mission is professional military education for U.S. service members, but civilians and international students comprise a significant and growing proportion of the NPS student body. As a result, although every college and university involved in distance learning faces many of the same challenges, educators at NPS must develop unique approaches to provide the best education possible for all of our distance students.

With this in mind, **GEAC** researched exemplary practices used at leading educational institutions throughout the world to develop guidelines for quality distance learning at NPS. The References section at the end of this guide lists these sources, which include:

• **Standards for evaluating distance learning** used by national and international academic consortia, state university systems, and leading universities

• **Standards for accreditation** applied to distance learning programs by regional and national accrediting organizations

• **Legal requirements for accessibility** of online courses and educational materials

• **Research** on teaching and learning at a distance, and

• **Research-based guides for practice** prepared by experienced distance educators

Additionally, we consulted with NPS faculty, staff, contractors, and administrators to understand the unique requirements for distance learning at NPS.
Our goal was a set of guidelines that would be comprehensive enough to include the features that most contribute to student success, but flexible enough to accommodate a wide variety of learner needs, program goals, technology tools, and teaching styles. Usability, enhanced by brevity and clarity, was also a major concern (Baldwin & Ching, 2018). Ultimately, GEAC grouped the most important elements of excellent distance learning into guidelines in eight categories:

- Course Preparation
- Organization of Content
- Learning Outcomes and Assessment
- Student Engagement
- Course Site Design and Navigation
- Technology for Teaching and Learning
- Media
- Accessibility

The major sections of this guide detail the specific guidelines in each category. Each section also notes applicable NPS policies, accreditation standards, and legal requirements and provides references for further detail, supporting research, and authoritative guides to practice. The guidelines are compiled in a Distance Learning Quality Checklist toward the end of the document, designed as a quick reference tool for implementing, evaluating, and improving quality features in NPS distance courses.

**Using the Guidelines**

It is important to keep in mind that the guidelines are just that—guidelines. They are not intended to require the same tools, approach, design, or look and feel for all distance courses at NPS. Instead, they outline goals and objectives for quality distance learning that all NPS programs are encouraged to achieve in their own way.

The guidelines also strongly recommend aspects of course design that are helpful to all students, but that are especially important to student success in distance learning (Clark & Mayer, 2016; Nilson & Goodson, 2018; Online Learning Consortium, 2019a; Quality Matters, 2018).

Here are some examples of how the guidelines can be used:

- In designing a course, faculty can refer to the guidelines when writing learning outcomes and scheduling activities and assessments
- In developing a course, instructional designers can check the guidelines to plan the layout and navigation of a course site and ensure that instructional media follow best practices for retention of learning content
- In delivering a course once the guidelines have been implemented, instructors can use the included quality features to maximize the efficient use of their teaching time and verify that all students are successfully completing course activities
In evaluating a course, administrators can collect data suggested by the guidelines to analyze student engagement and success. In revising a course, faculty and staff can use the guidelines to sustain the most effective features of the course and prioritize changes to content and activities. These examples emphasize how successful distance learning is a team effort. At first glance, the many topics covered in the guidelines may give the impression that distance learning presents too many challenges, and requires attention to too many details, for a single faculty member assigned to teach a course. That impression is absolutely correct. No single individual, regardless of her or his level of content expertise or technical knowledge, should try to do everything alone. GEAC, ITACS, and departmental support staff are here to help. The guidelines point out where these departments’ help may be needed and should be used.

The guidelines point out where GEAC and support staff can help create quality courses. The guidelines should not be used is as a “scorecard” to compare one course to another. To encourage collaboration and avoid the impression that faculty or staff are being “graded,” the Distance Learning Quality Checklist does not use detailed assessment rubrics or assign numerical scores to any guideline (McGahan et al., 2015; Baldwin & Trespalacios, 2017; Baldwin & Ching, 2018; Gawande, 2009). For the same reason, the guidelines are not designed to help determine whether a course achieves a “passing grade” from any review process. Instead, anyone using the Checklist is invited to gauge the extent to which each guideline has been implemented and to provide qualitative feedback aimed at improving the course. At every stage of the course life cycle, the guidelines are best used as a tool for formative assessment aimed at continuous improvement.

Overall, when working on any aspect of a distance learning course, NPS educators can use the guidelines to put themselves in a student’s place. Taking on the role and perspective of a student is the best way to realize how quality distance learning requires organization, interactivity, and consideration for students’ needs. These are essential features of effective teaching in any setting that all NPS programs should aspire to provide for our students, whether resident in Monterey or deployed to a remote station. We hope the Distance Learning Quality Guide will be useful for improving all the learning experiences offered to the NPS community.
1. Course Preparation
Successful distance learning requires higher levels of preparation and advanced planning from both instructors and students (MacDonald & Thompson, 2005, McQuiggan, 2012; Nilson & Goodson, 2018; Shimoni et al., 2013). The guidelines in this section are designed to make sure that distance learning students are given the information they need to succeed, and that they receive this information in a timely manner. The most important element of the course for this purpose is the syllabus, but other components also play key roles in preparing both learners and teachers for an efficient and effective learning experience.

Applicable standards for this category:
- Council of Regional Accrediting Commissions' Interregional Guidelines for the Evaluation of Distance Education (C-RAC) (2011), guideline 4

Course Preparation Guidelines:

1.1 Course syllabus includes all essential information
The importance of the course syllabus cannot be overstated. As the NPS Academic Policy Manual (2018, section 6.7) describes it:

> The course syllabus introduces and explains why the course is important and outlines the methods the faculty/instructor plans to use to help students learn. The course syllabus is a principal means of communicating the purpose, content and objective of each course.

There are endless ways a syllabus can accomplish these objectives and facilitate learning (Grunert, 2000; Richmond, 2016). A leaning-centered syllabus need not be lengthy but must be comprehensive. To ensure that students can easily access essential information, the syllabus for an NPS distance learning course should include the following:

- Instructor phone and email
- Instructor office hours
- Technology requirements
- Catalog description
- Course objectives
- Learning outcomes
- Course topics and schedule
- Course assignments
- Textbooks and other required materials (including software)
- Assessment and grading criteria
- Course policies
- NPS Honor Code statement
A learning-centered syllabus need not be lengthy, but must be comprehensive

Subsequent sections of this guide cover some of these items in more detail. Departments, programs, and faculty may of course include additional information. NPS does not require that all courses use a standard template for syllabi, but departments may find that using a departmental template can reduce instructors’ workload and lessen the cognitive load on students at the start of a course.

There is no optimal length for a syllabus, but there is evidence that students appreciate the details on requirements, schedule, assignments, and assessments available in longer syllabi (Harrington & Gabert-Quillen, 2015).

For additional guidance and pro tips:

- Boettcher and Conrad (2016, pp. 109–126)
- Gannon (2018)
- Ko and Rossen (2017, pp. 111–137)
- McCabe and González-Flores (2017, pp. 101–105)
- Nilson and Goodson (2018, pp. 63–66)
- Richmond (2016)

1.2 Course clearly indicates due dates for all assignments

NPS students are busy, working professionals. Advance knowledge of due dates and deadlines is very important to distance learners, particularly those working full-time and/or managing family responsibilities (Gering et al., 2018; MacDonald & Thompson, 2005; Milheim, 2012). In addition to noting due dates in the syllabus, best practices for this guideline include using an online course calendar and sending reminder messages in announcements or emails. Even with these reminders, some students will miss deadlines; the course syllabus should spell out policies on work submitted late (see Guideline 1.1).

Students who frequently miss deadlines may be facing a non-academic problem they are reluctant to reveal. When this happens, reaching out via email or other private messaging with an invitation to discuss any issues could greatly increase a student’s chances of success.

For additional guidance and pro tips:

- Boettcher and Conrad (2016, pp. 174–177)

1.3 Course schedule allows adequate time for provisioning students with instructional materials and software

Requiring students to complete activities before they can acquire required textbooks and software is a waste of everyone’s time (MacDonald and Thompson, 2005; Shimoni et al., 2013). Commands or employers provide many NPS students with books and other required materials, but this practice is
far from universal. Regardless of how materials are provisioned, delays can occur for reasons beyond students’ control. Because all course time is precious, scheduling activities such as pretests, surveys, reflective discussions of students’ goals for the course, and non-graded tests of hardware and software (see Guideline 6.1) in the first week or lesson can get a course off to a strong start and avoid major problems later on.

2. Organization of Content

There are many effective ways to organize any course, and NPS encourages faculty to use innovative organizational frameworks that work well with content, methods, and individual teaching styles. For these reasons, there is only one guideline in this category, but it is an important one.

A strong body of evidence argues for the division of content into small segments that learners can easily attend to, remember, comprehend, and apply toward learning goals (Clark & Mayer, 2016). Richard E. Mayer (2011) defines segmentation, or chunking, as breaking a large lesson into a series of smaller, manageable parts and making sure the learner masters one part before moving on to the next. Segmentation of content is a key to success in any educational setting, but it is absolutely critical for distance learning (Clark & Mayer, 2016; Mayer & Pilegard, 2014).

Applicable standards for this category:

- Association to Advance Collegiate Schools of Business’ Eligibility Procedures and Accreditation Standards for Business Accreditation (AACSB), standard 7
- C-RAC, guideline 4

Organization of Content Guideline:

2.1 Course consistently divides content into manageable units

Ruth C. Clark and Richard E. Mayer (2016) provide many examples of the segmentation principle and repeatedly emphasize that dividing distance learning content into manageable units makes it easier for students to comprehend complex material, improves student performance, and increases student satisfaction.

As subject matter experts, faculty will be the best judges of how to divide content. Most well-organized instructional materials, including those created by faculty for their own courses, incorporate segmentation and can provide guidelines for chunking content within a weekly distance learning lesson. Examples include:

- Headings and subheadings in a textbook
- Slides and bullets in a presentation
- Foundational principles
- Steps in a process
- Boxes in a flowchart
- Schools of thought
- Taxonomic classifications
Whatever organizing principle is used, best practice calls for the presentation of content to be incremental, adding complexity in stages or layers and checking students’ mastery of one stage before moving on to the next (Nilson & Goodson, 2018). Keep in mind that it can be challenging for experienced faculty to put themselves in the place of novice learners to determine how much content is appropriate for each unit (Clark et al., 2006).

Additionally, most NPS students, while they possess rich professional and life experience, have been outside an academic environment for many years and may struggle with the cognitive and lifestyle adaptations required for going back to school. Instructional designers and other members of the distance learning team can provide suggestions on how to segment content to keep student workload and cognitive load at a productive level.

For additional guidance and pro tips:

- Darby (2019)
- Clark and Mayer (2016, pp. 201–218)
- Clark et al. (2006, pp. 161–188)
- Ko and Rossen (2017, pp. 142–145)
- Nilson and Goodson (2018, p. 87)

3. **Learning Outcomes and Assessment**

Guidelines in this category are designed to clearly define what instructors expect from their students and verify that students are meeting those expectations. The overarching purpose of these guidelines is to make the process of learning clear, transparent, and predictable. These are features that instructors should strive for in any course, but they are especially important in distance learning (Gering et al., 2018; Lee, 2014; Milheim, 2012).

Specifying learning outcomes and aligning activities and assessments with learning outcomes creates a path for students to achieve the goals of a course. Rubrics establish a clear and consistent basis for assessing students’ progress toward those goals and provide helpful feedback. Once the goals are achieved, giving students a chance to think critically on what they have learned increases both their capacity to learn and their ability to transfer learning to professional practice (Clark & Mayer, 2016; Nilson, 2013).
It therefore comes as no surprise that accreditation standards emphasize learning outcomes and assessment for effective teaching and learning. Instructional designers, trained and experienced in helping faculty and subject matter experts define outcomes and develop activities and assessments to align with standards, are the best resource for implementing the guidelines in this category.

Applicable standards for this category:

- **NPS Academic Policy Manual** (2018), 6.7.3, 6.7.6
- **Western Association of Schools and Colleges Senior College and University Commission’s Handbook of Accreditation (WSCUC)** (2013), criteria for review 2.3, 2.4, 2.5, 2.6, 4.1
- **Accreditation Board for Engineering and Technology’s Criteria for Accrediting Engineering Programs (ABET)** (2018), General Criterion 3
- **C-RAC**, guidelines 4, 5
- **AACSB**, standards 7, 8, 11, 15

**Learning Outcomes and Assessment Guidelines:**

3.1 **Course specifies clear and measurable learning outcomes**

Yogi Berra said it best: “If you don’t know where you’re going, you’ll end up someplace else.” Even with motivated learners, rich content, and exemplary teaching, students cannot fulfill the goals of a course or prepare for the next stage of academic or professional success without clear and measurable learning outcomes. Specifying what students should learn—in terms of how they should demonstrate their learning—sets clear goals for the course and enables teachers to determine how well those goals have been achieved.

A learning outcome is a sentence stating what students should be able to do to demonstrate learning. Clear and measurable learning outcomes include a single verb defining an action that can be observed and specify conditions for assessing a student’s ability to perform that action (Nilson & Goodson, 2018). Bloom’s taxonomy, a system for classifying objectives in the cognitive domain of learning, suggests some verbs educators can use to write measurable learning outcomes (Anderson & Krathwohl, 2000; Krathwohl, 2002).

Outcomes that specify complex behavior sometimes require complex sentences, but the sentence should still only use one demonstrable action verb. Linda B. Nilson and Ludwika A. Goodson (2018, p. 47) provide these examples, to which we add emphasis highlighting the verbs:

- At the end of this course in Engineering Graphics, the student will be able to **draw** a multi-view representation of a solid object using a computer-aided design software package.
During simulated problem-solving meetings attended by master’s students in the leadership department and held in the department’s conference rooms, the student will successfully lead group discussions aimed at solving given problems.

Developing clear and measurable learning outcomes is a science that includes artistic elements. Subject matter experts who have deep knowledge of what students should learn may still find it challenging to express desired learning in terms that students can readily grasp, or that they can use to plan and organize their workload. Faculty should find the following guides helpful, but should not hesitate to reach out to instructional designers for suggestions or to review learning outcomes to make them as clear, measurable, and actionable as possible.

For additional guidance and pro tips:

- Darby (2019)
- Darby and Lang (2019, pp. 5–26)
- Dirksen (2016, pp. 59–78)
- Ko and Rossen (2017, pp. 43–47)
- Krathwohl (2002)
- Morrison et al. (2019, pp. 104–127)
- Nilson and Goodson (2018, pp. 21–30)

3.2 Assignments are clearly aligned with learning outcomes

Once the goal is defined, a pathway must be chosen. This is done by aligning learning activities and assessments directly to learning outcomes. Faculty may use their experience to determine the best route for learning (the “sage on the stage” approach), they may give students some choice and control over what route to take (the “guide on the side” approach; Gering et al., 2018), or they may combine the two approaches. In all cases, however, all the activities students engage in should advance them toward achievement of the learning outcomes defined for the course (Morrison et al., 2019).

This may seem obvious, but in practice, some readings, discussions, exercises, and media required for a course may not contribute directly to students’ attainment of specified outcomes. These activities may be in the course because they were included in previous versions, because the instructor is familiar and comfortable with them, or because students find them interesting and enjoyable. There may be excellent reasons to include such activities, but if the instructor cannot articulate how they will help students learn what they should be learning, the activities could be a waste of time and effort.

Assessments that do not actually assess the skills and knowledge defined in learning outcomes are the worst offenders in this category. The mere fact that a quiz, test, essay, or other assessment covers something the students should know or was part of the instructor’s professional training is not a justification for requiring students to complete it. Any graded assignment should be a formative or summative assessment of a specific learning outcome. If faculty members feel that an activity is important, but they are unable to express how it aligns with a course learning outcome, an instructional designer may help make the educational purpose of the activity more explicit or help design a replacement for it.
3.3 Course includes rubrics for all constructed-response assignments

Designing valid and reliable assessments can be difficult; grading them can be even harder. For the purposes of this guideline, constructed-response assignments are graded activities that present students with a question or task and require them to respond by writing, drawing a diagram, producing an audio recording or video, or completing other creative or problem-solving activities. Essay and discussion questions are typical examples of constructed-response assignments, but solving an applied math problem, developing software, or designing a robot would also fall into this category.

Constructed-response assignments are typically not graded on a full-credit/no-credit basis; instead, they are rated on a scale from no demonstration of learning (earning zero points, or an F letter grade) to full or outstanding achievement of a learning objective (100 points, or an A or A+ letter grade), with several defined intermediate ratings. Ratings usually include several distinct, weighted criteria. A rubric defines the criteria, parameters, and indicators used for rating the student’s response and grading the assignment (Stevens & Levi, 2013).

Rubrics make the assessment of learning clearer and easier for both instructors and students and enhance the validity and reliability of assessments. They can also help improve students’ performance by guiding them on what to do to demonstrate their learning, and by increasing their confidence that they can do so (Lee, 2014; Stevens & Levi, 2013). When an assessment includes subjective elements, rubrics define the subjective criteria that will be applied, enhancing clarity and making the assessment more transparent. Peter A. Facione and Noreen C. Facione (1994) offer a sample rubric for assessing critical thinking skills, while Susan Ko and Steve Rossen (2017) and Margaret Foley McCabe and Patricia González-Flores (2017) include rubrics for online discussions. Dannielle D. Stevens and Antonia Levi (2013) present practical guidelines on developing rubrics with examples from a wide variety of disciplines.

**GEAC can assist faculty in developing rubrics to make assessment of learning easier**

Using the rubric features of an LMS can allow instructors to evaluate student work more rapidly while providing detailed, individualized feedback (Darby & Lang, 2019). Like learning outcomes, rubrics take time and effort to develop and can be challenging even for experts, particularly when the assessment looks at creativity or soft skills. This is another element of quality distance learning where instructional designers can be the faculty’s best friends.

For additional guidance and pro tips:

- Budhai and Skipwith (2016, pp. 73–90)
- Darby and Lang (2019, pp. 27–36, 131–157)
- Dirksen (2016, pp. 271–287)
- McCabe and González-Flores (2017, pp. 114–121, 238–258)
- Nilson and Goodson (2018, pp. 37–58)
3.4 Students have opportunities for critical reflection on their learning

Metacognition—the ability to assess one’s own knowledge, skills, and learning—is a higher-order thinking skill that contributes greatly to educational and career success (Abrami et al., 2015; Ambrose et al., 2010). Encouraging students to evaluate what they have learned in a course and relate their learning to their professional and personal goals helps them develop critical thinking skills and can stimulate their overall intellectual growth. Moreover, it empowers students to take a greater share of control over their learning (Nilson, 2013).

Initial self-introductions, weekly discussion questions, and short essays assigned after exams or major assignments provide excellent opportunities for students to reflect on the goals, process, and success of their learning. Sharing these reflections on discussion boards or in breakout groups helps create a community of learning, a challenging but vital objective for distance courses (Belcher et al., 2015; Bickle & Rucker, 2018; Boling et al., 2012; Cole et al., 2020).

Through reflection on learning, students analyze problems and suggest solutions, identify obstacles and exchange means for overcoming them, and recognize and celebrate successes. These activities can also combine reflection on learning with peer teaching or social learning for a multi-layered engagement strategy (Clark & Mayer, 2016). In other words, sharing reflections on learning leads students to become teachers.

Critical reflection on learning leads students to become teachers

For additional guidance and pro tips:

- Darby and Lang (2019, pp. 17–32)
- Ko and Rossen (2017, pp. 197–221)
- Nilson and Goodson (2018, pp. 91–92)

4. Student Engagement

Student engagement is critical for success in any form of learning, but it is particularly critical for distance learning (Bernard et al., 2004; Bolliger & Inan, 2012; Martin & Bolliger, 2018; Redmond et al., 2018). There are many ways to define engagement, but all the definitions center around meaningful psychological interaction between the learner and an instructional environment that promotes the
achievement of the learning goal (Clark & Mayer, 2016). In addition to benefitting student learning, engagement enables faculty to utilize their individual teaching styles and provides opportunities for both students and teachers to enjoy the experience of distance learning (Conrad & Donaldson, 2011; Conrad & Donaldson, 2012; Darby, 2019; Darby & Lang, 2019).

A commonly used typology (Martin & Bolliger, 2018) defines three dimensions of engagement as essential for meaningful learning:

- Engagement with content
- Engagement with the instructor
- Engagement with other learners

Flower Darby and James M. Lang (2019, p. 81) emphasize the importance of all three forms of engagement:

*It's not enough for students to work with your content. It's not even enough for students to work with you. They must work with each other, too, to lean and succeed.*

Each category of the guidelines relates to all three dimensions in some way, because student engagement should be a major concern in all elements of course design and delivery. This category focuses on student-student and student-instructor engagement. As with all aspects of quality distance learning, student engagement doesn’t just happen; it requires a coherent strategy and advance planning (Martin & Bolliger, 2018; Boettcher & Conrad, 2016; Budhai & Skipwith, 2016). The guidelines in this category are designed to help educators develop and execute a successful strategy for learner engagement.

In any mode of distance learning, teachers must reach out to students frequently to keep the lines of communication open. Lectures, whether live or recorded, are not enough for this purpose. Messages providing direction and encouragement should be pushed out to students frequently, preferably through multiple channels (Darby, 2019; Strandberg & Campbell, 2014). In all forms of communication, teachers should also model the form, tone, and content of messages they expect from their students. In short, instructor engagement is a necessary prerequisite for student engagement (Redmond et al., 2018).

**Applicable standards for this category:**

- **WSCUC**, standard 4
- **C-RAC**, guidelines 4, 5, 6
- **AACSB**, standards 7, 8, 10, 11, 12, 13, 15
- **ABET**, criterion 4

**Student Engagement Guidelines:**
4.1 Course specifies expectations and guidelines for interaction

Clarifying what, when, and how students will be expected to communicate with the instructor and with each other maximizes the positive impact of student engagement and helps build a community of learning (Berry, 2017; Lee, 2014; Martin & Bolliger, 2018). Guidelines that will apply to students in all interactions, such as expectations for professional tone, grammar and spelling, and “netiquette,” could be spelled out or referenced in the syllabus or pushed out to students in announcements at the beginning of a course—preferably both.

To be successful in distance learning, a teacher must be approachable. Students should be made aware of when and how the instructor will communicate with them, and vice versa, both in normal circumstances and extraordinary situations. Course or departmental policies spelled out in the syllabus should specify reasonable time frames for both students’ and instructors’ responses to emails, discussion posts, and other communications. Reminder messages the first week of the course and at other times will also be helpful. Hours when the instructor will be available for phone calls, and when and whether students can reach the instructor by text or chat, should also be provided. Clarifying all these policies helps students and teachers respect each other’s time.

A good practice for setting expectations that will apply to all instances of an activity is to present the rules or guidelines both in the initial activity and in a reference students can access throughout the course. For example, the instructor could go over procedures for asking questions during live lectures during the first lecture and include them in an easily accessible page of the course site. Similarly, requirements for number and timing of posts and replies, word count, references, and use of professional-register English on discussion boards can be included in the directions for the first discussion assignment and in a discussion assignment rubric. Jennifer H. Herman and Linda B. Nilson (2018) offer a sample grading rubric for participation in live online sessions. The guides to practice listed below include many other suggestions for making sure that students know how to engage productively with each other and with the instructor.

For additional guidance and pro tips:

- Boettcher and Conrad (2016, pp. 48–50)
- Darby (2019)
- Darby and Lang (2019, pp. 72–106)

4.2 Course defines time frame and methods for instructor feedback

The difficulty or impossibility of meeting students face-to-face makes more frequent and more structured feedback a key part of effective teaching at a distance (Fayer, 2014; Berry, 2017). The syllabus, announcements, and/or assignment directions should let learners know when to expect grades and comments. Especially when students are expected to use feedback to improve future assignments, posting a quick announcement when feedback is available can be helpful for students’ time management. Keep in mind, also, that if the course uses discussion boards or group activities,
feedback on students’ efforts will be visible to at least some other students, so the tone and content of instructor comments should be tailored accordingly. If the course involves peer review or peer assessment, students should be provided with appropriate guidelines. Apropos of this, note that replies to posts on a discussion board are effectively a form of peer review.

In distance learning, instructors must take care not only to provide students with helpful feedback but to make sure students know how to receive it. The feedback features of an LMS may not be self-explanatory, and not all instructors in a program may use them, so directions for the first assignment should indicate how to access instructors’ comments and when they will be available. Likewise, if feedback on documents will come in the form of tracked changes, comment balloons, or other reviewing features of productivity apps, it will be helpful for instructions to note so in the assignment instructions. The same consideration applies to audio, video, or image editors, software development tools, or other apps required for the course.

For additional guidance and pro tips:

- Boettcher and Conrad (2016, pp. 239–252)
- Darby (2019)
- Darby and Lang (2019, pp. 107–130)

### 4.3 First week includes introductions from instructor and students

A functioning community of learning requires students to view each other as competent individuals who can support one another and contribute to each other’s goals (Berry, 2017; Martin & Bolliger, 2018; Pittaway & Moss, 2014). Giving learners the opportunity to introduce themselves in a way that highlights common interests and experiences is an excellent way to begin building community and start breaking down the sense of isolation that distance students typically feel (Bolliger & Inan, 2012; Chametzky, 2017; Darby & Lang, 2019; Strandberg & Campbell, 2014).

**A few paragraphs or a short video can help students get to know their instructors as real people**

For the same purposes, it is especially important for introductions to present the instructor not just as a subject matter expert but as a trustworthy and considerate community leader. Janice Marie Orcutt and Laurie P. Dringus (2017, p. 30) found that in successful distance courses, “The common goal of learning shared by instructor and student had its foundations in the creation of authentic relationships between instructor and students.” Instructors can begin creating authentic relationships with students by opening courses with a few paragraphs or a short video that will help students get to know them as people and asking students to do the same (Darby & Lang, 2019; Nilson & Goodson, 2018).

Student introductions can be substantive as well as social, leading students to explore course content in addition to getting to know each other (Darby and Lang, 2019). Introductions can also provide opportunities for students to familiarize themselves with and test the learning technology used in the course (see Guideline 6.1). If a course will require students to use a collaboration app such as Zoom,
Microsoft Teams, or Collaborate, using the app to create an introduction would be a superb way for students to gain and/or demonstrate familiarity with the platform in a supportive environment.

Finally, introductions can give important feedback to instructors, providing clues on which topics are likely to be easier or more difficult for students to grasp based on their prior career and educational experience. Introductions can also warn of potential problems that may arise during the course. If students mention that they may be required to travel overseas for work or that they care for three children while working full-time, instructors would do well to prepare contingencies.

For additional guidance and pro tips:

- Boettcher and Conrad (2016, pp. 134–139)
- **Darby (2019)**
- Darby and Lang (2019, pp. 90–92)
- McCabe and González-Flores (2017, pp. 114–121)
- Nilson and Goodson (2018, 85, pp. 110–112)

4.4 Each week includes substantive interaction with the instructor

Regular and substantive interaction between students and instructors is a definitive component of quality distance learning—a component the U.S. Department of Education requires as a condition of extending student aid to learners in online programs (Online Learning Consortium, 2019b). While there is no agreement on the specific requirements for regular and substantive interaction, there is a strong consensus that instructors should interact with distance students, as a class or individually, on topics relevant to the course on at least a weekly basis (Lee, 2014; Orcutt & Dringus, 2017). Alicia Graziosi Strandberg and Kathleen Campbell (2014, p. 6) put the case for frequent interaction unequivocally:

> Communicate with your online students several times a week.... When there is no interaction or limited engagement online student may feel alone. Email is not enough[;] have virtual online meetings and office hours, identify a time where phone calls are welcomed. If you are unavailable, students will seek out answers and information from sources that may be incorrect, misleading or unreliable.

Synchronous, live lectures may be counted as opportunities for interaction, particularly when time is set aside for questions, breakout groups reporting back to the class, etc. However, videos of lectures are *not* interactive and lack the immediacy, energy, and responsiveness required for building teaching presence and personalization in a distance course (Darby, 2019).

In distance learning, as with any team effort, effective communication is indispensable for success. Any or all the technologies used in a distance course, including the LMS, email, audio, video, chat, social media, and many others, can be effective channels for interaction. Instructors are encouraged to use all the resources that are available, combining scheduled communication such as course announcements and discussion board posts with frequent unscheduled messages and timely replies to students. The options are endless, and the medium, tone, and content of interactions with students allow the instructor’s presence and teaching style to shine through.
Regardless of the form, occasion, or specific objectives of interaction, teachers can use all communication with students as opportunities to encourage students and strengthen their resolve to succeed (Darby & Lang, 2019). Many faculty members did not experience such supportive communication during their own professional training, and few are specifically trained to provide it. The guides to practice referenced as sources in this section provide many helpful techniques and suggestions, but the best guideline is to consider how to make interaction helpful, professional, and authentic.

**For additional guidance and pro tips:**

- Budhai and Skipwith (2016, pp. 1–12)
- *Darby (2019)*
- Ko and Rossen (2017, pp. 308–367)
- Lehmann and Chamberlin (2018)
- McCabe and González-Flores (2017, pp. 60–70, 162–165, 254–262)
- Nilson and Goodson (2018, pp. 131–164)

**4.5 Each week includes substantive interaction between students**

Distance learning is a team effort, and your students are part of the team. Even when a course does not include group projects, peer review, or other collaborative assignments, distance students can be encouraged to help each other learn, reduce feelings of isolation, and build a community of learning (Berry, 2017; Bickle & Rucker, 2018; Chametzky, 2017; Martin & Bolliger, 2018; Vickers, 2017). All the tools and technologies used for teacher-to-student interaction, particularly collaboration tools and social media, can be just as easily employed to facilitate interaction between students.

In synchronous courses, remember that live sessions need not all be lectures. Student presentations and structured discussions can be effective ways to use the time scheduled for virtual class meetings. Consider using half the weekly time devoted to live sessions for lectures and the other half for student-to-student interaction as a whole class or in small groups, using a tool such as Collaborate or Zoom, with the instructor framing discussions and dropping in as needed.

The primary venue for student interaction in asynchronous courses is the threaded discussion. This format, like any learning activity, has limitations and drawbacks, but instructors can foster highly productive discussions by asking engaging questions, clarifying expectations for posts and replies, and being careful not to dominate the discourse (Herman & Nilson, 2018). Instructors should also be prepared to moderate threaded discussions to encourage best practices in netiquette, inclusiveness, and gender and cultural sensitivity (Milheim, 2017). Many apps for real-time communication, such the chat feature in Sakai or the free application Slack, can also be used asynchronously and can allow students to combine text, images, and media into rich learning content.
Peer review and professional communication are essential elements of graduate education. Providing a variety of opportunities for interaction between students, with clear guidelines and expectations for content and conduct, will put students in a stronger position to apply what they have learned to the practice of their professions.

For additional guidance and pro tips:

- Budhai and Skipwith (2016, pp. 47–72)
- Darby (2019)
- Darby and Lang (2019, 75–107)
- Nilson and Goodson (2018, pp. 131–157)

4.6 Course provides opportunities for midterm or ongoing feedback

Feedback is just as important for teachers as it is for students, and feedback for both must be timely in order to be useful for improvement. In the traditional classroom, teachers can use observation and non-verbal clues to determine quickly if students are engaged and are challenged at an appropriate level for learning. In online settings, even in synchronous activities, instructors typically do not receive this real-time feedback (Orcutt & Dringus, 2017). This can lead to serious problems, particularly if issues accumulate over the length of a course.

Because end-of-course surveys cannot provide instructors with timely feedback, best practice calls for students to be given multiple opportunities to share opinions and comments with the instructor. Instructors can choose from many ways to encourage students to provide feedback. A comprehensive mid-course survey can be useful but may take time that would be better spent on learning, particularly if it is required shortly before an exam or other major assignment.

Short, semi-structured surveys consisting, for example, of one Likert scale (numerical rating) question and a comment box can generate useful feedback and can create additional opportunities for interaction. Most LMS platforms have survey features that teachers or instructional designers can easily use to create quick questions, and free web apps for surveys are readily available. Every feedback opportunity requires some investment in time and effort, but implementing timely feedback can lead to big dividends in student learning and satisfaction.

For additional guidance and pro tips:

- McCabe and González-Flores (2017, pp. 172–183)
4.7 Students have an opportunity to evaluate the course after completion

Most NPS courses require students to complete Course Evaluation Forms (CEFs, formerly known as Student Opinion Forms, or SOFs) administered through the Office of the Registrar. However, CEFs are not required for courses listed as seminar, directed study, or thesis/dissertation, or for courses with fewer than five students enrolled. Student evaluation of these types of courses is at least as important, if not more so, than evaluation of courses for which CEFs are required. Course evaluations are also a major component of accreditation standards (AACSB standard 12; ABET criterion 4; C-RAC guideline 6; WSCUC standard 4).

With this in mind, we encourage instructors and departments to work with the Office of the Registrar either to require CEFs for all distance courses or to develop end-of-course surveys tailored to specific considerations of advanced courses offered through distance modalities.

For additional guidance and pro tips:
- Boettcher and Conrad (2016, p. 299)

5. Course Site Design and Navigation

The course site is the “face” of a distance learning course. Just as a human face can appear welcoming and helpful, dismissive and discouraging, or confused and frustrated, the look, feel, and functionality of an LMS or course website can send positive or negative messages to learners. The organization and navigation of a course site are even more important, as the site creates the virtual environment in which students must perform many, if not all, activities in the course.

All the basic principles of web and user experience (UX) design apply to course sites and other online interactive elements of a distance learning course. (One vital component of UX design, accessibility, is covered later, in its own category.) Alan Cooper et al. (2014), Jesse James Garrett (2010), Steve Krug (2014), and Jenifer Tidwell et al. (2020) offer many examples of excellent UX design. The guides to practice referenced in this category are full of suggestions on how to apply general concepts of web development to distance learning. These concepts are too extensive to summarize here, but instructional designers, educational technologists, and tech support specialists use them every day. The following guidelines concentrate on the aspects of site design that are most critical for successful distance learning (Fayer, 2014; Lee, 2014; Milheim, 2012; Shimoni et al., 2013), with special focus on meeting the specific needs of NPS distance students and ensuring their access to the full range of services available to them.

**Applicable standards for this category:**
- **WSCUC**, criterion for review 2.13
- **C-RAC**, guidelines 4, 7
Course Site Design and Navigation Guidelines:

5.1 Course site design is consistent with other courses in program
Consistency is a fundamental principle of student-friendly design. Whenever students encounter a new site design or LMS, they must take time to learn how to find what they need and do what they must to succeed in the course. Many successful distance programs provide a short course for this purpose or include it in orientation before students begin their first academic term.

*Consistency is a fundamental principle of student-friendly design and reduces faculty and staff workload*

Regardless of how students learn to use a collaborative learning environment, requiring them to learn to use a different one when enrolling in a subsequent course in the same degree or certificate program increases extraneous processing and adds to cognitive load (Mayer, 2009). Basically, it wastes students’ time and shows a lack of consideration for their needs as distance learners (Fayer, 2014; Lee, 2014).

There are some good reasons for variations in course site designs. For example, a course site may require customization to enable learning activities, such as the use of specialized apps. Students should be advised of these changes at the start of the course and given time to learn to use the special features (see Guideline 6.1). In many cases, however, the use of individual site designs to satisfy faculty or staff preferences directly contradicts the best practices of learner-centered design (Darby, 2019; Darby & Lang, 2019; Dirksen, 2016. It also increases faculty and staff workload when multiple sites must be maintained and updated. Instructional designers and educational technologists can recommend better alternatives.

For additional guidance and pro tips:
- Clark and Mayer (2016, pp. 29–48)
- Dirksen (2016)
- Vaughn (2014, pp. 278–295)

5.2 Course site navigation is clear and consistent
Consistent design within the site for a course is even more important than consistency between course sites in a program. As a basic principle of web design, clear, consistent, and intuitive navigation allows students to concentrate on learning the content rather than finding it. This is another area where learner-centered design both facilitates learning outcomes and shows consideration for distance students (Darby, 2019; Fayer, 2014; Lee, 2014; Milheim, 2012; Morrison et al., 2019).

For additional guidance and pro tips:
- **Darby (2019)**
- Dirksen (2016)
- Ko and Rossen (2017, pp. 141–172)
- Krug (2014)
5.3 Course site includes links to essential student resources

Easy access to learning resources contributes greatly to student success and satisfaction in distance courses (Shimoni et al., 2013; Milheim, 2012). Like the NPS faculty, the staff at NPS work hard to give students the best possible chance of learning success both on campus and at a distance. Support services at NPS make good efforts to make students aware of the help they can provide and how to access it, and to improve their outreach and availability to distance learners. Still, distance students typically do not make use of some services as often as on-campus students (Leavitt, 2019). To help students get the support they need when they need it, course sites should incorporate links to essential student resources, including the following:

- **TAC Help Desk**
- **CLE** or appropriate learning management system support site
- Support sites for other required software
- **Dudley Knox Library**
- **Graduate Writing Center**
- **Thesis Processing Office** (if a 4000-level course)

6. Technology for Teaching and Learning

The guidelines in this category are not intended to specify or standardize the hardware and software NPS instructors or programs use in courses. Instead, they are designed to ensure that any required technology is functional and user-friendly for NPS distance students.

For this purpose, course developers and instructors should make student-centered technology choices, considering not only what technology tools to use but who, when, where, and how students will use them and how they can get help with them when they need it (Milheim, 2012; Online Learning Consortium, 2019a; Quality Matters, 2018; Shimoni et al., 2013). Student-friendly requirements for hardware and software should be consistent throughout the program and accommodate the widest reasonable range of platforms, web browsers, etc.

The increasing use of smartphones and other mobile devices in higher education (Quinn, 2012; Yu & Cristol, 2019) opens new horizons for distance learning but requires adaptation of methods and media to the mobile environment. Meanwhile, both distance and face-to-face courses are making increasing use of virtual reality (VR) and augmented reality (AR; see Baxter & Haney, 2019; Boboc & Koc, 2019; Becnel, 2019; Johnston et al., 2017; Kavanagh et al., 2017; Rathner & Sevigny, 2019). However, NPS distance students may not be able to take full advantage of web, mobile, VR, or AR technologies while at work or deployed. Darby and Lang (2019, p. 70) remind us that the growing promise of new technologies should not obscure the need to keep learning technology student-friendly and aligned with learning objectives:
Media and tech tools have great potential to improve the student educational experience. These are powerful tools—powerfully beneficial or powerfully distracting. Choose wisely.

Applicable standards for this category:

- **WSCUC**, criterion for review 3.5
- **C-RAC**, guidelines 5, 7
- **ABET**, general criteria 7, 8

**Technology for Teaching and Learning Guidelines:**

6.1 **Course activities include testing all required hardware and software**

Ensuring that students test all required hardware and software is a common-sense best practice that many instructors nevertheless omit or assume can be done at the last minute. These instructors probably have not found their networks incompatible with the test-taking features of an LMS on a Sunday when an exam is due and tech support won’t be available until Monday morning. Having students test apps and hardware in ungraded or introductory activities and allowing time for problems to be fixed in advance of high-consequence assessments goes a long way toward improving student performance and satisfaction (Milheim, 2012).

Instructors should also not assume that tech-savvy or “digital native” students will automatically know how to use familiar technology for educational purposes. Students who spend an inordinate amount of time posting videos from their phone to Instagram may still have to learn how to post a video to the LMS.

For additional guidance and pro tips:

- Boettcher and Conrad (2016, pp. 62–78)
- Nilson and Goodson (2018, pp. 224–225)

6.2 **Course site includes instructions for accessing technical support**

Providing easy-to-find links for ITACS and LMS/CLE support was covered in Guideline 5.3, but these NPS services may not provide all the support distance students need for a specific course. ITACS does not provide on-demand support for Zoom, Collaborate, and other communication apps or for many commercial or open-source apps for statistics, media development, or other course requirements.

Unique software provided by departments or instructors must be supported as well. In these cases, educational technologists or other department staff, or instructors, may have to take on responsibilities as support providers. Overall, all courses should include direct links to the people who will actually help students along, including information about when and how students can contact them.

For additional guidance and pro tips:

- Boettcher and Conrad (2016, pp. 62–78)
6.3 Course plans alternatives for activities that may be blocked by cybersecurity regulations
The many layers of cybersecurity regulations NPS students must comply with create special considerations for educational technology. For example, a wide variety of commercial and open-source software is not approved for use over the Navy-Marine Corps Internet (NMCI) or for users in specific commands and agencies. Even when an app is officially approved, some features may be unusable or function poorly over government networks. In particular, some of the web conferencing features of Collaborate and Zoom that instructors find most helpful are not available to NMCI users.

This does not mean that NPS distance courses must default to the lowest common denominator of technology guaranteed to work for every possible user’s situation. It does, however, mean that instructors should plan what students can do to satisfy course requirements if regulations, connection speed limits, or other issues block the advanced features of apps or hardware. This consideration will become even more important as courses begin to utilize AR, VR, and other emerging technologies.

7. Media
The design, production, and effective use of educational media combine art and science at every stage. A number of authoritative works provide well-researched principles and extensively tested recommendations for developing media for distance and traditional educational settings (Clark, 2014; Clark and Mayer, 2016; Dirksen, 2016; Mayer, 2014). Our goal here is to outline the most important guidelines for using media to maximum effect in NPS distance courses. As with the previous category on educational technology, some of the guidelines in this category could be considered common sense, but are nevertheless violated or ignored entirely too often, resulting in expensive and time-consuming media that, in practice, are marginal or even detrimental to learning success.

GEAC can create engaging, effective, and accessible instructional media for face-to-face and distance courses

Instructional designers and media specialists are an excellent source of ideas and expertise for making educational media both impressive and effective. However, experts can find it especially difficult to put themselves in the student’s place when watching and interacting with media. This is particularly true at NPS, where a student’s literal place may be a ship, a military base, a café, or an apartment full of small children. With this in mind, feedback from representatives of the learner population is extremely valuable for designing and using media.

Applicable standards for this category:
- AACSB, standard 5
- C-RAC, guidelines 5, 7
Media Guidelines:

7.1 Content and design of media are clearly aligned with learning outcomes
Media that lead learners to remember images, sounds, or game interactions but not to recall the required content have failed in their instructional purpose. To clearly support learning outcomes, educational media do more than just capture and hold students’ attention; successful media help students attend to content that directly serves learning objectives (Dirksen, 2016; Mayer, 2014; Miller, 2014; Thalheimer, 2009). The key to success is focusing the learner’s cognitive capacity on apprehending, retaining, and deepening understanding of core material (Clark & Mayer, 2016). This can be challenging, but applying the principles of evidence-based practice helps developers and instructors appreciate how students experience media and therefore offers the best chance of success (Clark, 2014: Lajoie, 2014; Mayer & Fiorella, 2014).

For additional guidance and pro tips:
- Clark and Mayer (2016)
- Dirksen (2016)
- Ko and Rossen (2017, pp. 244–290)
- McCabe and González-Flores (2017, pp. 88–96)

7.2 “Talking head” videos are less than six minutes in length
The optimal length for an instructional video varies with its subject matter and objectives. Step-by-step demonstrations of lengthy procedures, for example, can be effective when they employ fundamental principles of multimedia design for learning (Clark & Mayer, 2016). However, in a study of over 6.9 million cases of videos made for massive open online courses (MOOCs), Philip Guo et al. (2014) found that learner engagement with videos declines dramatically after six minutes. The drop-off was especially pronounced with videos of lectures or other formats primarily featuring people speaking to an audience or to each other. Dazhi Yang (2017) found that students in online STEM courses rated short demonstration videos very effective for teaching statistics. In addition to having optimal length for engagement, the short videos were easy for students to replay as many times as necessary. These and similar findings (Hsin & Cigas, 2013; Miller & Redman, 2010) prompt Cynthia J. Brame (2015) to conclude, “Making videos longer than 6–9 minutes is probably wasted effort.”

SMEs, instructional designers, and media producers are the best judges of the format and content of video that will work best in a course. The six-minute limit is not an inviolable rule, but there should be clear and convincing reasons for going beyond it. For example, courses using live sessions should always record the sessions for students who were not able to participate at the scheduled time. Design teams should keep in mind that speech and dialog have much greater impact when delivered
live in the learner's presence than when pre-recorded and viewed at a distance. Alternative formats for presenting the content should always be considered. For instructors invested in the lecture as a primary instructional method, “less is more” can be a hard lesson to learn, but one which will likely be rewarded with improved student performance and satisfaction.

For additional guidance and pro tips:

- Brame (2015)
- Clark & Mayer (2016)
- Darby & Lang (2019, pp. 52–66)
- Dimeo (2017)
- Dirksen (2016)

7.3 Media function well on multiple platforms
Distance learning always takes place in a bring-your-own-device (BYOD) environment. This creates two areas of special consideration for media: compatibility and screen size (McQuiggin et al., 2015).

While some media formats are compatible with a wide variety of players, operating systems, and web browsers, others are optimized for a limited range of systems and devices and may not play well, or at all, on others. Moreover, functionality includes interactivity, so designers and developers have a responsibility to test interactive features on a wide range of devices and particularly on multiple browsers.

Screen size can also have a major impact on functionality. Educational media that are impactful and user-friendly when viewed on a desktop can lose a great deal of their effectiveness when viewed on a mobile phone. Interactivity comes into play here as well. A game or user-controlled animation that works brilliantly with a mouse on a desktop can be confusing and frustrating on a touch screen tablet. By the same token, an LMS that is optimized for mobile learning cannot automatically optimize media loaded into it. These concerns once again underscore the value of usability testing with members of the learner population during media development (Krug, 2014).

For additional guidance and pro tips:

- Brame (2015)
- Clark and Mayer (2016)
- Dirksen (2016)
- McQuiggin et al. (2015)

8. Accessibility
Making sure all learners can access learning content is a fundamental responsibility for educators in any setting. Federal law, particularly Section 508 Amendment to the Rehabilitation Act of 1973, requires that all U.S. government information systems enable access to persons with disabilities. Policy statements from the Department of Defense Office of the Chief Information Officer (n.d.) and Department of the Navy (Woods, 2018) mandate the implementation of this requirement.
While general guidance on accessibility is readily available (Nilson & Goodson, 2018; Web Content Advisory Group, 2018), the guidelines in this final category are intended to remind the NPS community of our responsibilities for accessibility and include some suggestions on how to meet those responsibilities.

Instructors and students accustomed to military education and training may believe that few military learners will have disabilities and therefore feel that accessibility in distance learning represents wasted effort. The reality, however, is that many military members suffer from undiagnosed “hidden” disabilities or conceal disabilities for career or personal reasons (Flink, 2017; National Council on Disability, 2009). The bottom line on accessibility, as stated by the Department of Defense Office of the Chief Information Officer (n.d.), is that, “For DoD, Section 508 is not just the law; it’s the right thing to do!”

**Applicable standards for this category:**
- Section 508 Amendment to the Rehabilitation Act of 1973 (42 U.S.C. §794d)

**Accessibility Guidelines:**

8.1 Course site complies with legal requirements for accessibility

The World Wide Web Consortium (W3G) Web Content Advisory Guidelines, version 2.1 (2018) include extensive and detailed recommendations for making online content as accessible as possible to persons with disabilities. The specific items in the Distance Learning Quality Checklist are taken from the Section 508 checklist on the NPS Brand and Style Guide’s Accessibility and Copyright page:

- Font colors provide appropriate contrast
- Link texts use descriptive wording
- Frame scrolling is not disabled
- Links are provided for any plugins or software required to view content
- Images include alternate text
- Tables contain a header or footer row and a summary

**GEAC** web developers will be well-versed in these guidelines and can help ensure that course sites are accessible and easy to use for all learners. Designers can also make use of open-source and commercial apps and tools for checking accessibility such as the WebAIM WAVE Web Accessibility Evaluation Tool and the Color Oracle color blindness simulator.
For additional guidance and pro tips:

- General Services Administration, Section 508.gov (n.d.)
- National Center on Accessible Educational Materials (n.d.)
- WebAIM WAVE Web Accessibility Evaluation Tool

8.2 Instructional media comply with legal requirements for accessibility

The WCAG 2.1 guidelines (Accessibility Guidelines Working Group, 2018) include detailed criteria for accessibility of videos and other instructional media. The online learning quality guidelines used by major U.S. universities and consortia (California State University, 2019; California Virtual Campus, 2018; Clemson Online, 2018; Illinois Online Network, 2018; Online Learning Consortium, 2019a; Quality Matters, 2018; State University of New York, 2018) emphasize two criteria in particular as most important:

- Pre-recorded videos include captions and audio descriptions of visual elements
- The course plans for captioning synchronous sessions and live video if requested

Providing captions and audio descriptions for pre-recorded media demands planning and effort, but software tools are available to make the process easier. For long-form instructional videos or PowerPoint-style presentations, best practice calls for using scripts to record narration (National Center on Accessible Educational Materials, n.d.; Nilson and Goodson, 2018; Vaughn, 2014).

Captions for interviews, short introductory videos, impromptu demonstrations, and other visual media that benefit from spontaneity typically require transcription. Zoom offers a speech-to-text feature to create transcripts for recorded videos and meetings. Collaborate, unfortunately, does not include this capability. Camtasia for Windows (but not for Mac) also includes an automatic captioning feature. Instructors can also upload videos to YouTube to take advantage of its free automated transcribing, but this may not be an appropriate option in NPS courses.

All automatically generated captions typically contain errors, but editing the transcripts usually requires much less work than typing up transcripts from the video, which can be tedious. Nilson and Goodson (2018, p. 236) provide a list of resources for making captioning less burdensome.
Captions for live video need either a commercial real-time captioning service or onsite staff trained on the captioning features of collaboration tools. The cost of either option could make providing captions for every live lecture or other synchronous course session prohibitively expensive. For this reason, this guideline adopts the policy recommended by the California Virtual Campus (2018): be prepared to provide captions for live sessions if students with disabilities request them.

Making media more accessible is one of the most important ways to demonstrate consideration for learners’ needs.

There is as yet no easy solution for captioning, but department staff and GEAC can help instructors experiment with tools for transcription and captions. Leading accessibility experts recognize the problems of captioning but expect they will become easier to overcome as accessibility technology continues to improve (Accessibility Guidelines Working Group, 2018). In any event, making instructional media more accessible is one of the most important ways for educators to demonstrate consideration for learners’ needs. This, together with organization and interactivity, is one of the defining elements of quality distance learning.

For additional guidance and pro tips:

- General Services Administration, Section 508.gov (n.d.)
- National Center on Accessible Educational Materials (n.d.)
- WebAIM WAVE Web Accessibility Evaluation Tool
Distance Learning Quality Checklist

The checklist beginning on the following page compiles the guidelines in all categories in a quick reference format for review and comment. As noted in the Introduction, the checklist does not use numerical scores and is not intended as a rubric for grading or comparison. Instead, its purpose is to help NPS faculty, staff, and administrators set and achieve goals for quality course design. With that in mind, reviewers are given the option to gauge the implementation of each guideline as “absent,” “partial,” or “full”; to check the inclusion of specific items in the syllabus, course site, and accessibility requirements; and to provide feedback and suggestions for revisions.

The checklist is also available as an online form for use by distance learning team members in all departments and programs at NPS.
# Distance Learning Quality Checklist

**Date:** 
**Instructor:** 
**Course:** 
**Program:** 
**Instructional Designer:** 
**Reviewer:** 

<table>
<thead>
<tr>
<th>Quality Guideline</th>
<th>Implementation in Course</th>
<th>Comments</th>
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<tbody>
<tr>
<td><strong>1. Course Preparation</strong></td>
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<tr>
<td>1.1 Course syllabus includes all essential information:</td>
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<td>Instructor phone &amp; email</td>
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<tr>
<td>Course topics and schedule</td>
<td>☐ ☐ ☐</td>
<td></td>
</tr>
<tr>
<td>Course assignments</td>
<td>☐ ☐ ☐</td>
<td></td>
</tr>
<tr>
<td>Textbooks and other required materials (including software)</td>
<td>☐ ☐ ☐</td>
<td></td>
</tr>
<tr>
<td>Assessments &amp; grading</td>
<td>☐ ☐ ☐</td>
<td></td>
</tr>
<tr>
<td>Course policies</td>
<td>☐ ☐ ☐</td>
<td></td>
</tr>
<tr>
<td>NPS Honor Code statement</td>
<td>☐ ☐ ☐</td>
<td></td>
</tr>
<tr>
<td>1.2 Course clearly indicates due dates for all assignments</td>
<td>☐ ☐ ☐</td>
<td></td>
</tr>
<tr>
<td>1.3 Course schedule allows adequate time for provisioning students with instructional materials and software</td>
<td>☐ ☐ ☐</td>
<td></td>
</tr>
<tr>
<td><strong>2. Organization of Content</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1 Course consistently divides content into manageable units</td>
<td>☐ ☐ ☐</td>
<td></td>
</tr>
<tr>
<td><strong>3. Learning Outcomes and Assessment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1 Course specifies clear and measurable learning outcomes</td>
<td>☐ ☐ ☐</td>
<td></td>
</tr>
<tr>
<td>3.2 Assignments are clearly aligned with learning outcomes</td>
<td>☐ ☐ ☐</td>
<td></td>
</tr>
<tr>
<td>Section</td>
<td>Absent</td>
<td>Partial</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
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<td>---------</td>
</tr>
<tr>
<td>3.3 Course includes rubrics for all constructed-response assignments</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>3.4 Students have opportunities for critical reflection on their learning</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4. <strong>Student Engagement</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.1 Course specifies expectations and guidelines for interaction</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4.2 Course defines time frame and methods for instructor feedback</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4.3 First week includes introductions from instructor and students</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4.4 Each week includes substantive interaction with the instructor</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4.5 Each week includes substantive interaction between students</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4.6 Course provides opportunities for midterm or ongoing feedback</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4.7 Students have an opportunity to evaluate the course after completion</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>5 <strong>Course Site Design and Navigation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.1 Course site design is consistent with other courses in program</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>5.2 Course site navigation is clear and consistent</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>5.3 Course site includes links to essential student resources:</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>TAC Help Desk</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>CLE or other LMS support site</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>Support sites for other required software</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>Dudley Knox Library</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>Graduate Writing Center</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>Thesis Processing Office (if a 4000-level course)</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Quality Guideline</td>
<td>Implementation in Course</td>
<td>Comments</td>
</tr>
<tr>
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<tr>
<td><strong>6 Technology for Teaching and Learning</strong></td>
<td></td>
<td></td>
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<tr>
<td>6.1 Course activities include testing all required hardware and software</td>
<td>☐ ☐ ☑</td>
<td></td>
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<tr>
<td>6.2 Course site includes instructions for accessing technical support</td>
<td>☐ ☐ ☑</td>
<td></td>
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<tr>
<td>6.3 Course plans alternatives for activities that may be blocked by cybersecurity regulations</td>
<td>☐ ☐ ☑</td>
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<tr>
<td><strong>7 Media</strong></td>
<td></td>
<td></td>
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<tr>
<td>7.1 Content and design of media are clearly aligned with learning outcomes</td>
<td>☐ ☐ ☑</td>
<td></td>
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<tr>
<td>7.2 &quot;Talking head&quot; videos are less than six minutes in length</td>
<td>☐ ☐ ☑</td>
<td></td>
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<tr>
<td>7.3 Media function well on multiple platforms</td>
<td>☐ ☐ ☐</td>
<td></td>
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<tr>
<td><strong>8 Accessibility</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.1 Course site complies with legal requirements for accessibility:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Font colors provide appropriate contrast</td>
<td>☐ ☐ ☑</td>
<td></td>
</tr>
<tr>
<td>Link texts use descriptive wording</td>
<td>☐ ☐ ☑</td>
<td></td>
</tr>
<tr>
<td>Frame scrolling is not disabled</td>
<td>☐ ☐ ☑</td>
<td></td>
</tr>
<tr>
<td>Links are provided for any plugins or software required to view content</td>
<td>☐ ☐ ☑</td>
<td></td>
</tr>
<tr>
<td>Images include alternate text</td>
<td>☐ ☐ ☑</td>
<td></td>
</tr>
<tr>
<td>Tables contain a header or footer row and a summary</td>
<td>☐ ☐ ☑</td>
<td></td>
</tr>
<tr>
<td>8.2 Instructional media comply with legal requirements for accessibility:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-recorded videos include captions and audio descriptions of visual elements</td>
<td>☐ ☐ ☑</td>
<td></td>
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<tr>
<td>Course plans for captioning synchronous course sessions and live video if requested</td>
<td>☐ ☐ ☑</td>
<td></td>
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<tr>
<td>Additional Comments:</td>
<td></td>
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<td>----------------------</td>
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</tbody>
</table>
References

Key Sources

The most valuable sources for best practices in distance learning were the standards and criteria for developing and evaluating distance courses recommended by leading universities, state university systems, nonprofit academic consortia, and learning management systems. Among these were:

- Blackboard’s Exemplary Course Program Rubric (2017)
- California State University’s QLT Course Review Instrument (2019)
- California Virtual Campus-Online Education Initiative’s Course Design Rubric (2018)
- Canvas Course Evaluation Checklist (Philips, 2018)
- Clemson Online ENCORE (2018)
- Illinois Online Network’s Quality Online Course Initiative (2018)
- Online Learning Consortium’s Quality Scorecard Suite (2019a)
- State University of New York’s QSCOR (2018)

Another category of key sources was the standards for evaluating distance learning programs used by accreditation organizations, especially:

- Western Association of Schools and Colleges Senior College and University Commission’s Handbook of Accreditation (2013)
- Council of Regional Accrediting Commissions’ Interregional Guidelines for the Evaluation of Distance Education (2011)
- Accreditation Board for Engineering and Technology’s Criteria for Accrediting Engineering Programs (2018)
- Association to Advance Collegiate Schools of Business’ Eligibility Procedures and Accreditation Standards for Business Accreditation (2018)

Key sources for standards and legal requirements for accessibility were:

- Section 508 Amendment to the Rehabilitation Act of 1973 (42 U.S.C. §794d)

Authoritative guides to practice comprised a final category of key sources. These works, authored by veteran online educators, focused on translating the findings of research and lessons learned from experience into concise, practical “how-to” guidance for busy teachers. Outstanding among these guides were:

- Clark and Mayer, e-Learning and the Science of Instruction (2016)
- Darby and Lang, Small Teaching Online (2019)
- Dirksen, Design for How People Learn (2016)
- Ko and Rossen, Teaching Online: A Practical Guide (2017)
- McCabe and González-Flores, Essentials of Online Teaching (2017)
• Nilson and Goodson, *Online Teaching at its Best* (2018)

The bibliography provides full citations for the key sources listed above as well as all other sources used to develop the guidelines for quality distance learning.

**Online Resource Collections**

A large and growing number of resources for distance learning can be found online. The following curated resource collections are excellent places to start searching for educational materials and best practices for distance courses.

- [Arizona State University TeachOnline](https://teachonline.asu.edu/)
- [California State University System Multimedia Educational Resources for Learning and Online Teaching (MERLOT)](http://merlot.org/merlot/)
- [Purdue Repository for Online Teaching and Learning (PoRTAL)](http://www.sera.ate.purdue.edu/)
- [University of Central Florida Center for Distributed Learning Teaching Online Pedagogical Repository (TOPR)](https://www.ucf.edu/onlineped/)
- [University of Florida Center for Instructional Technology & Training Online Teaching Resources](http://www.cti.ufl.edu/)

**Bibliography**


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https://www.aacsb.edu/accreditation/standards/business


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Milheim, K. (2012). Towards a better experience: Examining student needs in the online classroom through Maslow’s hierarchy of needs model. *Journal of Online Learning and Teaching, 8*(2), 159.


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https://doi.org/10.1186/s40594-017-0096-x
