This course supports the assessment for TAT2. The course covers 3 competencies and represents 4 competency units.

Introduction

Overview
This course completes the performance assessments for the Technology Integration domain. This component of your work at WGU is designed to help you gain knowledge about how technologies can be used to engage and support meaningful learning.

The performance assessment project is broken down into individual tasks. You should complete each task listed in order before moving on to the next task. The instructional unit you are planning for must be 7–10 hours in length. You may choose to use your Instructional Design Production project as the plan of instruction you will be modifying. If you choose not to use that product, you will need to provide a new plan of instruction for this set of tasks. The plan of instruction includes a needs analysis, learner analysis, goal statement, task analysis, performance objectives, instructional strategies, materials, resources, and assessments.

Watch the following video for an introduction to this course:

Note: To download this video, right-click the following link and choose "Save as...": [download video].

Competencies
This course provides guidance to help you demonstrate the following 3 competencies:

- **Competency 501.2.1: Media and Technology Foundations**
  The graduate describes the use of media and technology for learning and is able to evaluate the environment for the implementation of technology.

- **Competency 507.2.3: Integrated Technology Development**
  The graduate produces exportable instructional and professional products using various integrated application programs.

- **Competency 507.2.4: Technology Integration**
  The graduate integrates appropriate instructional uses of productivity and research applications into the learning environment.

Teaching Dispositions Statement
Please review the [Statement of Teaching Dispositions].

Course Mentor Assistance
As you prepare to successfully demonstrate competency in this subject, remember that course mentors stand ready to help you reach your educational goals. As subject matter experts, mentors enjoy and take pride in helping students become reflective learners, problem solvers, and critical thinkers. Course mentors are excited to hear from you and eager to work with you.
Successful students report that working with a course mentor is the key to their success. Course mentors are able to share tips on approaches, tools, and skills that can help you apply the content you’re studying. They also provide guidance in assessment preparation strategies and troubleshoot areas of deficiency. Even if things don’t work out on your first try, course mentors act as a support system to guide you through the revision process. You should expect to work with course mentors for the duration of your coursework, so you are welcome to contact them as soon as you begin. Course mentors are fully committed to your success!

Preparing for Success

The information in this section is provided to detail the resources available for you to use as you complete this course.

Learning Resources

The learning resources listed in this section are required to complete the activities in this course. For many resources, WGU has provided automatic access through the course. However, you may need to manually enroll in or independently acquire other resources. Read the full instructions provided to ensure that you have access to all of your resources in a timely manner.

Automatically Enrolled Resources

You can access the learning resources listed in this section by clicking on the links provided throughout the course. You may be prompted to log in to the WGU student portal to access the resources.

VitalSource E-Texts

The following textbooks are available to you as an e-text within this course. You will be directly linked to the specific readings required within the activities that follow.


Note: These e-texts are available to you as part of your program tuition and fees, but you may purchase hard copies at your own expense through a retailer of your choice. If you choose to do so, please use the ISBN listed to ensure that you receive the correct edition.

Other Learning Resources

You will use the following learning resources for this course.

Webinars

There is a webinar held regularly for Technology Production. You can find dates, times, links,
and phone numbers for this webinar by looking under "Announcements" in the TI Learning Community. There is also a recording of the webinar that is available whenever you need it, which is also linked from the "Announcements" section of the TI Learning Community.

Pacing Guide
The pacing guide suggests a weekly structure to pace your completion of learning activities. It is provided as a suggestion and does not represent a mandatory schedule. Follow the pacing guide carefully to complete the course in the suggested timeframe.

- **Pacing Guide: Technology Production**

*Note: This pacing guide does not replace the course. Please continue to refer to the course for a comprehensive list of the resources and activities.*

**Technology Tools for 21st Century Learning**

In this subject, you will complete the first of three tasks for the Technology Production performance assessment. In this first task, you will learn about a new model for learning and become familiar with new 21st century tools. Educators will need to become fluent with technology and, in many instances, will be learning with students. Additionally, you will research, read about, and analyze at least eight different technologies that might enhance your instructional unit, and then you will select five different technologies to integrate into the plan of instruction. You will write an essay that is based on your needs and learner analysis from Instructional Design Production or on another’s needs and learner analysis that includes the following:

- summary of your instructional problem
- summary of the needs and learner analysis
- goal of instruction
- summary of the plan of instruction
- summary of your research, readings, and analysis of at least eight technologies and how they can be used to support meaningful student learning

**Technology Integration, Analysis, and Design**

In the various programs that use this domain, a variety of terms are used to mean the same thing. The following terms will be used throughout this course’s set of tasks. You must consult with your mentor to determine the focus of your technology product to best fit with your program and future capstone project.

- Instructional event: This could be a curriculum unit in a K–12 setting, a training workshop, or a health-related intervention.
- Technology-based instructional product: The technology-based instructional product is something that you create using five selected technologies that support the instruction.
- Plan of instruction: The plan of instruction outlines the entire instructional event and will be the basis of your instructor’s manual. This includes your performance objectives, instructional sequence, instructional strategies, materials, resources, and assessments.
- Instructor's manual: This is an exportable, polished, and professional product that you could give to another instructor to teach the instructional unit.
This topic addresses the following competencies:

- **Competency 501.2.1: Media and Technology Foundations**
  The graduate describes the use of media and technology for learning and is able to evaluate the environment for the implementation of technology.

- **Competency 507.2.4: Technology Integration**
  The graduate integrates appropriate instructional uses of productivity and research applications into the learning environment.

### Changing Your Educational Paradigm

Watch the following video:

- **Changing Education Paradigms**

Reflect on the following questions:

- How do your students experience and interact with the world?
- How does their interaction with the world differ from yours?
- Do you learn from your students?
- Have you changed the way you teach, or are you stuck in your old ways of teaching?
- How can you use these new tools to communicate more effectively with your students?
- How might you modify the way you teach as you read and learn about the new 21st century tools?
- How do you feel about being a student of technology alongside your students?

### Twenty-first Century Technology Skills

Read the following chapters in *Integrating Educational Technology into Teaching*:

- chapter 1 (“Educational Technology in Context”)
- chapter 2 (“Theory Into Practice”)

As you read, pay particular attention to the following topics:

- 21st century student outcomes developed by the Partnership for 21st Century Skills
- the new standards and essential conditions for meeting the new 21st century skills
- chapter 1: educational, social, ethical, and legal issues that shape technology use
- chapter 2: Bandura’s self-efficacy theory added to other learning theories that serve as a foundation for technology integration strategies
- chapter 2: technology integration strategies based on theories of learning

### Meaningful Learning with Technology

Read the following chapter in *Meaningful Learning with Technology*:

- chapter 1 ("Goal of Technology Integrations: Meaningful Learning")

Reflect on the following questions in your notebook:
The underlying assumption is that productive and meaningful uses of technology will not occur if technologies are used in the traditional ways. What are some of those traditional ways, and why do they not promote meaningful learning?

- How do you believe that people learn?
- How does technology facilitate meaningful learning?

Read the following chapter in *Meaningful Learning with Technology*:

- **chapter 2** (*Inquiring with Technologies*)

Reflect on the following questions in your notebook:

- What are some ways technology can be used for investigation of relevant phenomena and problem solving?
- How can wireless devices be used to enable children/users to engage in flexible learning environments?

Read the following chapter in *Meaningful Learning with Technology*:

- **chapter 3** (*Experimenting with Technologies*)

Reflect on the following questions in your notebook:

- How can multiuser virtual environments enhance learning?
- How might gaming affect your students’ performance?
- How could you use technologies to have your students conduct experiments and make predictions?

Read the following chapter in *Meaningful Learning with Technology*:

- **chapter 4** (*Designing with Technologies*)

Reflect on the following questions in your notebook:

- What is design? How could you use design problems with your students?
- What are some of the technologies discussed that interest you for your students?

Read the following chapter in *Meaningful Learning with Technology*:

- **chapter 5** (*Communicating with Technologies*)

Reflect on the following questions in your notebook:

- How can online communication enhance learning?
- Which learning activities would be appropriate for your students that use communication technologies to meet instructional goals?
Read the following chapter in *Meaningful Learning with Technology*:

- chapter 6 ("Community Building and Collaboration with Technologies")

Reflect on the following questions in your notebook:

- Which technologies could you use to support collaborative projects?
- What are some learning activities that use technologies for connecting and collaborating with peers and experts?

Read the following chapter in *Meaningful Learning with Technology*:

- chapter 7 ("Writing with Technologies")

Reflect on the following questions in your notebook:

- How could you use blogs to support student writing?
- Which technology tools could you use that allow learners to publish their writing on the Internet? How can students engage in peer feedback?

Read the following chapter in *Meaningful Learning with Technology*:

- chapter 8 ("Modeling with Technologies")

Reflect on the following question in your notebook:

- How might you use concept maps, databases, and spreadsheets to help students construct models of domain knowledge?

Read the following chapter in *Meaningful Learning with Technology*:

- chapter 9 ("Visualizing with Technologies")

Reflect on the following question in your notebook:

- What is one visualization tool that you could use with your students to support personal visualization skills?

Read the following chapter in *Meaningful Learning with Technology*:

- chapter 10 ("Assessing Meaningful Learning and Teaching with Technologies")

Reflect on the following questions in your notebook:

- What are three technology tools you could use to assess meaningful learning outcomes?
• What are some guidelines on how you would create a rubric for assessing your students’ work?
• What do you think about using the following tools to assess student learning?
  o portfolios
  o student response systems
  o technology-based quizzes
  o technology-based tests
  o technology-based survey tools

Reflect on how to use the information from *Meaningful Learning with Technology* in your lessons to create more dynamic learning environments. In the first task of Technology Production, you will be writing about the technologies you selected and how they support meaningful learning. This book will be a valuable resource for your work on the Technology Production performance assessment.

**Technology Tools**

Read the following chapters in *Integrating Educational Technology into Teaching*:

  • chapter 4 ("Technology Tools for 21st Century Teaching: The Basic Suite")
  • chapter 5 ("Technology Tools for 21st Century Teaching: Beyond the Basics")
  • chapter 6 ("Hypermedia Tools for 21st Century Teaching")

**Integrating Technology Into Instruction**

Go to [Lynda.com](http://Lynda.com) and review lesson accelerators to find new ideas to integrate technology into instruction. Some ideas you may want to look for in the tutorials are as follows:

  • blogging
  • podcasting
  • Moodle
  • Photostory
  • RoboLab
  • SMART Boards

Take notes on the features you like, and consider how you might either include or adapt them for your instructional product.

**Notebook Assignment: Technology Analysis**

After reading *Meaningful Learning with Technology*, reading the suggested chapters in *Integrating Educational Technology into Teaching*, and reviewing technologies via Lynda.com, identify and analyze at least eight technologies in your notebook that you are interested in learning more about to use in your instructional unit.

Refer to the following chapters of *Integrating Educational Technology into Teaching* to learn more about the technologies you have selected:
chapter 9 (“Teaching and Learning with Technology in English and Language Arts Instruction”)
chapter 10 (“Teaching and Learning with Technology in Foreign and Second Language Instruction”)
chapter 11 (“Teaching and Learning with Technology in Mathematics and Science Instruction”)
chapter 12 (“Teaching and Learning with Technology in Social Studies Instruction”)
chapter 13 (“Teaching and Learning with Technology in Music and Art Instruction”)
chapter 14 (“Teaching and Learning with Technology in Physical Education and Health Education”)
chapter 15 (“Teaching and Learning with Technology in Special Education”)

Technology Tools Research

Research technologies you are interested in. For example, the iPad has been making inroads in the classroom since its debut in 2010. A few of the top educational apps for the iPad include the following:

- Toontastic is a creative app for children ages 4–7. It allows young animators create full cartoon stories. They can choose the setting, characters, and sound track, and they can record their own dialogue.
- Virtual History Roma is for older students or anyone interested in history. This app incorporates images, graphics, and other virtual techniques to make history spring to life.
- Mathboard is an excellent app for children in kindergarten through elementary school to test their knowledge of addition, subtraction, division, squares, cubes, and square roots with fun quizzes.

Visit the following web page to learn more about how apps can transform education:

- Apple in Education

Blogs in Education

See how blogs are being used in education by reviewing the following website:

- EduBlog Awards

Notebook Assignment: Considering Student Needs

Reflect on the following questions in your notebook to help focus your selection of technologies to enhance student learning:

- What challenges or problems do your students have with learning and understanding the topic you have chosen?
- What unique characteristics of the learner have you identified in the learner analysis to take into consideration when choosing technologies or designing technology strategies?
- How would you define meaningful learning for your students on the topic you are teaching?
- Now that you have read about 21st century technologies and how technology can be
used for meaningful learning, how do you plan to use technology?

- Based on this analysis, which technologies will be most appropriate for the goal of instruction and your target population?

Technology Integration Design Performance Task

Complete the following task in TaskStream:

- Technology Production: Task 1

For details about this performance assessment, see the "Assessment" tab in this course.

Instructional Strategies and Visual Planning Tools for Design of Technology Products

In this subject, you will learn about visual tools for planning and designing your technology product. A planning schematic or flowchart for the design of your technology product shows how the learner will move through the instructional materials using the various technologies.

Technology Integration Planning and Design

This topic prepares you for the second task for the Technology Production performance assessment. You will be planning the development of your technology-based instructional product. This planning stage includes:

- developing an instructional strategy that takes learners from a motivational introduction to the topic through the learners' mastery of the objectives and
- creating a planning schematic for the organization and flow of the materials and the integration of the technology.

This topic addresses the following competencies:

- **Competency 501.2.1: Media and Technology Foundations**
  The graduate describes the use of media and technology for learning and is able to evaluate the environment for the implementation of technology.

- **Competency 507.2.4: Technology Integration**
  The graduate integrates appropriate instructional uses of productivity and research applications into the learning environment.

Developing an Instructional Strategy

In past courses, you utilized Dick and Carey’s *The Systematic Design of Instruction* to learn about instructional design models. You may refer to this text as you develop your instructional strategy by completing the following steps:

Step 1: Review the content of the lesson. Determine what sequence and clustering of information should be used in presenting the content. The most useful tool for this is your task or goal analysis in which you identified the content, knowledge, and skills to be taught, and then arranged that content into a hierarchy.
Step 2: Determine the size or cluster of your materials in the instruction. Dick and Carey suggest the following five factors when determining how much information should be presented in a cluster:

- age of the learners
- complexity of the material
- type of learning
- whether the activity can be varied
- the amount of time required to complete the events in instruction

Step 3: Determine the learning components of the instructional strategies. You have used the Dick and Carey five instructional component model for your lesson design in Instructional Design Production. Consider the following strategies from the Dick and Carey model and how you will incorporate them into your lessons:

- **Pre-instructional activities**: These activities include motivating learners, informing learners about what they will learn, and stimulating recall of prior knowledge.
- **Content presentation**: Determine what information will be presented to the learner. Will this be inductive or deductive? Inductive is associated with discovery learning; with deductive, the content is presented by a textbook, instructor, or other materials.
- **Learner participation**: Determine how the learners will practice and receive feedback.
- **Assessment**: Determine how you will evaluate learning of the objectives in each lesson. Will technology be used? Refer to [chapter 10](#) ("Assessing Meaningful Learning and Teaching with Technologies") in *Meaningful Learning With Technology*.
- **Transfer of learning**: Consider what transfer of learning will need to occur for the instructional goal.

Step 4: Select a media and delivery system. Dick and Carey suggest the following to help determine the selection of media and delivery systems:

- **Domains of learning**: intellectual skills, verbal information, psychomotor skills, attitudes
- **Learner characteristics**: Media for learners with sensory, cognitive, or learning disabilities must comply with the requirements of the Americans with Disabilities Act. Consider other unique characteristics such as nonreaders.
- **Requirements in the objectives**: Review the objectives and the task requirements to determine if they limit or support the choices of media.
- **Other considerations**: availability of the media; ability of the designer; flexibility, durability, and convenience of the materials; cost effectiveness.

Step 5: Create a planning schematic or design blueprint. This planning schematic should include the following:

- sequence and clustering of lessons
- instructional strategies
- activities
- assessments
- technology use and integration

Review the following document on creating a planning schematic:

- Guidelines for the Technology Production Planning Schematic

Technology Integration Development Performance Task

Complete the following task in TaskStream:

- Technology Production: Task 2

For details about this performance assessment, see the "Assessment" tab in this course.

Technology Product Development

In this subject, you will develop your instructional product using the five technologies you selected. You will learn about the principles of message design that will be used to develop and create your instructional materials. Finally, you will develop an instructor manual to facilitate the use of your materials by others.

Note: You may use outside resources and links to outside resources in your instructional unit; however, at least 75% of the content of your plan must be your own original work.

Visual Literacy and Message Design Principles

According to North Central Regional Educational Laboratory (NCREL), visual literacy is the ability to interpret, use, appreciate, and create images and video using both conventional and 21st century media in ways that advance thinking, decision making, communication, and learning.

This topic addresses the following competencies:

- Competency 501.2.1: Media and Technology Foundations
  The graduate describes the use of media and technology for learning and is able to evaluate the environment for the implementation of technology.

- Competency 507.2.3: Integrated Technology Development
  The graduate produces exportable instructional and professional products using various integrated application programs.

- Competency 507.2.4: Technology Integration
  The graduate integrates appropriate instructional uses of productivity and research applications into the learning environment.

Visual Literacy

Read and study the following chapter of Instructional Technology and Media for Learning (11th Edition):

- chapter 3 ("Integrating Technology and Media into Instruction: The ASSURE Model")
Watch the following video and consider how the visuals are used to communicate a message:

- **Visual Literacy Across the Curriculum**

Consider the following fundamental principles of visual design:

- Make your visuals legible. All viewers must be able to see the words and images.
- Reduce the effort involved in interpreting the visuals. Use harmonious color and contrast combinations and underlying patterns.
- Choose a design that encourages viewer engagement and interaction with the message.

**Message Design**

Watch the following slideshow on message design:

- **Instructional Message Design**

In your notebook, identify 10 principles of message design that you will apply to enhance the clarity of the presentation of your instructional materials.

**The Instructor Manual**

After your instructional unit has been completed, you will write an instructor manual. An instructor manual is designed for use by someone other than the designer/developer of the instructional unit so that he or she can conduct or facilitate the lesson in the way that it was conceptualized to be delivered. The instructor manual is designed to assist the instructor before and during instruction. The information helps prepare the instructor for conducting the lessons and assessments in the way they were designed to produce effective instruction.

Your instructor manual should include

- an introduction and/or overview of the instructional unit;
- goals and objectives;
- a description of instructional strategies and how you have designed strategies to promote learning;
- a schedule of learning activities (e.g., a list of the learning modules with a description and an approximate length of time it will take to teach the unit);
- a description of assessment and/or evaluation of student learning (i.e., how you will determine if the goal of instruction has been met, a grading scale if appropriate for the age level, described project description with reference to a grading rubric found in the Appendix);
- materials needed (e.g., software, hardware, hard copies of lessons);
- the lesson (Each module must be self-contained with a description of the objective of the lesson and an explanation of how to teach or facilitate it. Also include practice, feedback, and assessment information.);
- screen captures, if required, to help the instructor better understand the lesson or content;
- an appendix containing all the course materials, even if they are on a website (It is
helpful for an instructor to have a hard copy to review.; and
  • an appendix of assessment materials, rubrics, and grading keys.

Note: Remember the principles of message design and try to use white space, headings, and bullets to make this easy to read and follow.

Technology Integration Product Performance Task

Complete the following task in TaskStream:

  • Technology Production: Task 3

For details about this performance assessment, see the "Assessment" tab in this course.

Final Steps

Congratulations on completing the activities in this course! This course has prepared you to complete the assessment associated with this course. If you have not already been directed to complete the assessment, schedule and complete your assessment now.

The WGU Library

The WGU Library
The WGU Library is available online to WGU students 24 hours a day.

For more information about using the WGU Library, view the following videos on The WGU Channel:

Introducing the WGU library

Note: To download this video, right-click the following link and choose "Save as...": download video.

Searching the WGU library

Note: To download this video, right-click the following link and choose "Save as...": download video.

Center for Writing Excellence: The WGU Writing Center

If you need help with any part of the writing or revision process, contact the Center for Writing Excellence (CWE). Whatever your needs—writing anxiety, grammar, general college writing concerns, or even ESL language-related writing issues—the CWE is available to help you. The CWE offers personalized individual sessions and weekly group webinars. For an appointment, please e-mail writingcenter@wgu.edu.
Feedback

WGU values your input! If you have comments, concerns, or suggestions for improvement of this course, please submit your feedback using the following form:

- [Course Feedback]

Accessibility Policy

Western Governors University recognizes and fulfills its obligations under the Americans with Disabilities Act of 1990 (ADA), the Rehabilitation Act of 1973 and similar state laws. Western Governors University is committed to provide reasonable accommodation(s) to qualified disabled learners in University programs and activities as is required by applicable law(s). The Office of Student Accessibility Services serves as the principal point of contact for students seeking accommodations and can be contacted at ADASupport@wgu.edu. Further information on WGU’s Accessibility policy and process can be viewed in the student handbook at the following link:

- [Policies and Procedures for Students with Disabilities]