

***Courses for Teachers***  
**All Grade Levels and Content Areas**

**21<sup>st</sup> Century Teaching and Learning in the Career and Technical Education Classroom**

Integrating 21<sup>st</sup> Century skills and technology tools into all areas of education is necessary to prepare today's students to compete globally. This six-session online course, plus an orientation session, is a content specific course that focuses on incorporating 21<sup>st</sup> Century teaching and learning into Career and Technical Education curricula. Participants in this course will be introduced to 21<sup>st</sup> Century skills and tools and how they can be used in the CTE classroom. Participants in this course will complete an instructional plan that includes 21<sup>st</sup> Century skills and tools.

Upon completion of the Integrating 21<sup>st</sup> Century Teaching and Learning in the CTE Classroom course, participants will:

- understand how 21<sup>st</sup> Century communication and collaboration skills foster higher order thinking skills in the CTE classroom
- understand how 21<sup>st</sup> Century thinking skills promote a deeper understanding of concepts in the CTE classroom
- understand how 21<sup>st</sup> Century assessments evaluate the learning styles of all students in the CTE classroom
- understand how 21<sup>st</sup> Century instructional models address the learning styles of all students in the CTE classroom
- recognize how 21<sup>st</sup> Century tools and resources enhance the learning process for digital learners in the CTE classroom
- understand the role of the teacher as a facilitator of 21<sup>st</sup> Century thinking and learning

**21<sup>st</sup> Century Teaching and Learning in the Dance, Health and Physical Education Classroom**

Participants in this course will be introduced to 21<sup>st</sup> Century skills and tools and how they can be used in the Dance, Health, and Physical Education Classroom. The content of this course is appropriate for K-12 teachers with resources focusing on multiple grade levels. Participants in this course will create a complete instructional plan that includes 21<sup>st</sup> Century skills and tools.

By the end of this course, participants will:

- understand how 21<sup>st</sup> Century communication and collaboration skills enrich thinking and learning in the dance, health, and physical education classroom.
- understand how 21<sup>st</sup> Century thinking and reasoning skills can be incorporated into their dance, health, and physical education classroom.
- recognize how various 21<sup>st</sup> Century assessments impact teaching and learning in dance, health, and physical education.

- identify 21<sup>st</sup> Century resources and strategies in dance, health, and physical education lessons that promote 21<sup>st</sup> Century learning for students.
- recognize and investigate 21<sup>st</sup> Century tools and resources that will enhance learning in the health, and physical education classroom.
- understand the role of the teacher as the facilitator of 21<sup>st</sup> Century thinking and learning in the dance, health, and physical education classroom.

### **21<sup>st</sup> Century Teaching and Learning in the Language Arts Classroom**

Participants in this course will be introduced to 21<sup>st</sup> Century skills and tools and how they can be used in the language arts classroom. The content of this course is appropriate for K-12 teachers with resources focusing on multiple grade levels. Participants in this course will complete an instructional plan that includes 21<sup>st</sup> Century skills and tools.

### **21<sup>st</sup> Century Teaching and Learning in the Mathematics Classroom**

Participants in this course will be introduced to 21<sup>st</sup> Century skills and tools and how they can be used in the mathematics classroom. The content of this course is appropriate for K-12 teachers with resources focusing on multiple grade levels. Participants in this course will complete an instructional plan that includes 21<sup>st</sup> Century skills and tools.

### **21<sup>st</sup> Century Teaching and Learning in the Science Classroom**

Participants in this course will be introduced to 21<sup>st</sup> Century skills and tools and how they can be used in the science classroom. The content of this course is appropriate for K-12 teachers with resources focusing on multiple grade levels. Participants in this course will complete an instructional plan that includes 21<sup>st</sup> Century skills and tools.

### **21<sup>st</sup> Century Teaching and Learning in the Social Studies Classroom**

Participants in this course will be introduced to 21<sup>st</sup> Century skills and tools and how they can be used in the social studies classroom. The content of this course is appropriate for K-12 teachers with resources focusing on multiple grade levels. Participants in this course will complete an instructional plan that includes 21<sup>st</sup> Century skills and tools.

### **21<sup>st</sup> Century Teaching and Learning in the Visual Arts Classroom**

Integrating 21<sup>st</sup> Century skills and technology tools into all areas of education is necessary to prepare today's students to compete globally. This six session online course, plus an orientation session, is one of several eLearning courses that focus on incorporating 21<sup>st</sup> Century teaching and learning. Participants in this course will be introduced to 21<sup>st</sup> Century skills and tools and how they can be used in the visual arts classroom, grades K-12. Participants in this course will complete an instructional plan that includes 21<sup>st</sup> Century skills and tools.

By the end of this course, participants will understand:

- understand how 21<sup>st</sup> Century communication and collaboration skills foster higher thinking skills in the visual arts classroom.
- understand how 21<sup>st</sup> Century thinking skills promote a deeper understanding of concepts in the visual art classroom.
- understand how 21<sup>st</sup> Century assessments evaluate the learning styles of all students in the visual arts classroom.
- understand how 21<sup>st</sup> Century instructional models address the learning styles of all students in the visual arts classroom.
- understand how 21<sup>st</sup> Century tools and resources enhance the learning process for digital learners in the visual arts classroom.
- understand the role of the teacher as a facilitator of 21<sup>st</sup> Century thinking and learning.

### **21<sup>st</sup> Century Teaching and Learning in the World Languages Classroom**

This course is designed to help World Language teachers develop and maintain a communicative classroom, facilitate content-based instruction and appropriate assessment, and incorporate 21<sup>st</sup> Century language proficiency into their classrooms. World Language teachers will build their knowledge of how to best organize instruction, serve as a facilitator of the class, and encourage international collaboration through 21<sup>st</sup> Century global awareness and cultural instruction.

### **Alternate Assessment**

This course is designed to assist the Special Educator in the administration of the APTA test. This class will explain the purpose of the test, who takes the test, how the test is administered and how to use test results. All educators giving the APTA test are required to have training, and this class will supply that training.

### **Approaches and Tools for Developing Web-Enhanced Lessons**

In this course, participants will learn how a well-designed WebQuest can cover core subject area content while also addressing essential 21<sup>st</sup> Century skills such as critical thinking, collaboration and media literacy. Participants will explore specific components that comprise an effective online learning experience and investigate a number of tools – including social bookmarking and wikis—that they can use to enhance collaboration and produce dynamic final projects. Participants will then use all of these resources to put together their own WebQuest and will create a plan for assessing students' performance. Throughout this workshop, participants will learn how the WebQuest model, enhanced with Web 2.0 resources, can help students gain and apply content knowledge while developing media literacy skills necessary for the modern world.

### **Balanced Assessment Part I: Using Summative Data to Promote and Support Learning**

A balanced assessment system consists of summative, benchmark, formative, and classroom assessment for learning. Each of those has a role to play in providing information for parents,

schools, teachers, and students to use in making learning decisions. While summative assessment is typically used to verify individual and group mastery of standards and objectives, it can also be used by teachers and students to set future learning targets. This course will provide a basis for understanding balanced assessment and data driven decision making, as well as guided practice in using data from various WESTEST reports with teachers and students to support learning.

### **Best Practices for Differentiating Instruction**

This course is designed to assist K - 12 teachers in effectively adapting lessons to meet the needs of a diverse group of learners. Participants will explore creative teaching strategies and assessments that support differentiated instruction and become familiar with strategies for managing a DI classroom. Teachers are encouraged to try some of the strategies in their classroom and discuss pros and cons with other learners in weekly discussions. As a final project participants will be asked to submit their choice of one of the following: 1) A technology rich lesson plan for DI. 2) A Reflective journal on 3 different student learners. 3) An image documentary.

### **Best Practices in the Digital Age: More Than PowerPoint**

What really works to increase the motivation and achievement of students when integrating technology into curriculum? In this course teachers and administrators will learn what instructional practices work best when integrating technology to motivate and engage learners while developing higher-level thinking and problem solving skills. Participants will choose one instructional practice to study more deeply, while identifying available technology tools, and how to manage their use. By the end of the course, participants will apply what has been learned to create a technology integrated project based on best practices.

### **Cell Phones as Learning Tools**

In this course, participants will learn how even the most basic cell phones can be used as powerful tools for teaching and learning. When integrated with free, web-based resources, cell phones offer students the ability to share ideas through activities such as blogging, podcasting and data gathering. While there are many legitimate concerns about using cell phones in schools, it is important that schools prepare students for success in a world overflowing with information. It is also important for students to learn how to use technology ethically and responsibly. This course will highlight meaningful ways that cell phones can be used as learning tools in and out of the classroom, while also addressing the challenges and resistance that many educators face when trying to integrate cell phones into learning activities.

### **Classroom Assessment Enhanced by Technology**

Effective assessment is a key element for student achievement in K-12 classrooms. Assessment is also an ongoing process, requiring multiple methods to ensure that teachers gather accurate information that meets the needs of all students. In this course, participants will explore principles of classroom assessment and a range of assessment methods supported by

technology. Participants will review formative and performance assessment, backwards design, and various methods including quizzes, rubrics, and electronic portfolios. By the end of the course, participants will design new assessments to use with their curriculum.

### **Classroom Management: Tips and Techniques**

As educators we learn theories and philosophies about classroom management but seldom learn practical methods for effective management. Classroom management involves a positive classroom environment, appropriate standards of behavior for students, student engagement, and effective management of routines and transitions. Establishing daily routines early in the school year is essential to effective classroom management. This course is intended to give teachers a practical guide to positive management of a classroom.

### **Co-Teaching: A shared Instructional Approach**

This course is designed for teachers and/or staff who are currently co-teaching as well as those who are considering the approach. This course will provide basic information about co-teaching, including a definition of co-teaching and how it compares to other shared instructional models; the rationale for its use; descriptions of five co-teaching approaches and their application; and characteristics of effective co-teaching. This course also provides an opportunity for participants to explore co-teaching within the context of 21st century teaching and learning.

While the content of this course focuses on a basic understanding of what co-teaching is and how it can be implemented, the course is also designed to allow participants to examine their personal beliefs and attributes, determine their readiness to co-teach, and identify areas in which they want to learn more.

### **Cyber Safety for Educators**

This course on provides information about using Internet resources safely. Participants are presented with insights into possible dangers student users face as well as guidelines to help safeguard them as they utilize the vast resources of the Web.

By the end of this course, participants will be able to:

- Identify major cyber safety issues for students
- Recognize, know how to report and be alert to spam, scams and other intrusions
- Understand fair use, plagiarism, illegal downloading and copyright laws
- Develop/ utilize Acceptable Use Policies for students
- Understand precautions of using social networking resources
- Identify risks, rights and responsibilities of Internet users and promote safe Internet usage
- Develop a plan to foster cyber safety for students

### **Designing a Virtual Field Trip**

This course will enable participants to use Internet resources to design a "virtual field trip"; for their students. Participants will become familiar with the strategies and resources that educators use to design these field trips, as well as tips and tricks to ensure their success. By the end of the course, participants will have designed an effective and engaging virtual field trip that is aligned to their state's standards.

### **Digital Storytelling**

Digital Storytelling tools and techniques enable us to tell short stories using electronic media. This seven week course will introduce participants to the nature and educational uses of digital stories and will guide them in developing and producing a story of their own. Participants will learn how to plan a story, obtain and incorporate still images and video clips, add voice narration and background music, and enhance their final product with special effects and transitions. Participants will be introduced to a variety of freely obtainable software programs to develop your digital stories.

By the end of this course participants will be able to:

- demonstrate how digital stories may be used both as teaching tools and learning products
- plan a story using scripting and storyboarding techniques
- obtain and select digital images and video clips
- record narration, obtain and incorporate additional audio material
- understand copyright regulations and restrictions when using multimedia sources
- be aware of the various software programs used as a creation tool for digital stories
- combine script and multimedia into a digital story, enhanced with special effects

### **Facilitating Instruction for English Language Learners**

This course is designed to help classroom teachers learn ways to raise achievement of English Language Learners in their classrooms by understanding, applying and implementing Sheltered Instruction. Participants will learn about the legal issues pertaining to Limited English Proficient students, develop background knowledge of second language acquisition, and explore the theory and practice of Sheltered Instruction. Participants will also examine Sheltered Instruction, including sheltering assessments, for both elementary and secondary English Language Learners. This course will also highlight the uses of technology to shelter instruction.

### **Finding the Best Educational Resources on the Web**

The World Wide Web provides rich resources for educators, but they are useful only if educators know what resources are there and how to find them. Participants in this course will explore the range of educational material available on the Internet and learn time-saving skills to search the Web more effectively for useful curricular resources. Participants will become familiar with popular search engines and subject directories and will learn techniques to use each one appropriately and efficiently. The course will also examine the importance of critical evaluation

of web resources and consider how to develop evaluation skills in the classroom. Participants will leave the course with a collection of web resources appropriate for their own classroom use.

### **Learning and Teaching with the Read/Write Web**

The Internet as we know it has been constantly changing and improving over the past several years and these changes have been so numerous and so dramatic as to inspire people to refer to this "new" internet as Web 2.0 or the Read/Write Web. The content of the Read/Write Web, as we will call it, is characterized by open communication, freedom to share and re-use content, and dynamic interactivity among users of varying technical abilities around the globe. There are now a multitude of web-based tools available that can allow people to organize their favorite bookmarks, write online documents, and share information with others through social software like blogs and wikis. These tools can positively impact teaching and learning and the implications are significant. Students can be empowered to see how their ideas can be shared easily with the world and students around the globe can easily collaborate and communicate with each other to build knowledge communities that are not dependent on time and space. A few dedicated educators are sharing their ideas and blogging about these new tools so that they can be used effectively in classrooms. In this course, participants will be exposed to many of the tools of the Read/Write Web and will get the chance to experiment with new tools each week. The final session will focus on how educators can help students to use these new tools safely. Discussions will help participants focus on how these tools can be integrated into the classroom to make the most of their potential to enhance student learning.

### **NBPTS Course #1**

This seven week course provides support to individuals working towards National Board Certification. Participants will be introduced to many resources and take part in group discussions as they are guided through the process of National Board Certification from the National Board for Professional Teaching Standards (NBPTS). This is the first of two support courses.

By participating in selected readings, activities, discussions, and assessments, participants will have access to valuable material through a dynamic online professional development experience. During the course, participants will examine recommended procedures for completing the National Board portfolio entries, discuss how the procedures fit into their certificate area and make the final decision about what goes into their final portfolio.

While this course content focuses on developing a completed National Board portfolio, the participant must realize that completion of this course does not replace or suggest National Board Certification. This course supports the candidate's endeavor toward certification, but National Board Certification rests with the quality of the completed portfolio entries submitted to National Board headquarters by the set deadline.

By the end of this course, participants will understand or be able to:

- recognize the five core propositions
- explore the standards of accomplished teaching
- identify the standards of their certificate area and begin to apply them to their teaching context
- identify activities that help describe themselves as a learner, a leader/collaborator and partner with family/community
- be able to classify their professional activities as "documented accomplishments"
- develop styles of writing that convey with conviction the impact of identified professional activities on student learning
- draft up to 8 accomplishments that document their work as a learner, a leader/collaborator and partner with students' family/community
- write a reflective summary
- develop a plan for completing and submitting a "boxed" Entry 4 during the Orientation Session of NB Course II

### **NBPTS Course #2**

This seven week course provides support to individuals working towards National Board Certification. Participants will be introduced to many resources and take part in group discussions as they are guided through the process of National Board Certification from the National Board for Professional Teaching Standards (NBPTS). This is the second of two support courses.

By participating in selected readings, activities, discussions, and assessments, participants will have access to valuable material through a dynamic online professional development experience. During the course, participants will examine recommended procedures for completing the National Board portfolio entries, discuss how the procedures fit into their certificate area and make the final decision about what goes into their final portfolio.

While this course content focuses on developing a completed National Board portfolio, the participant must realize that completion of this course does not replace or suggest National Board Certification. This course supports the candidate's endeavor toward certification, but National Board Certification rests with the quality of the completed portfolio entries submitted to National Board headquarters by the set deadline.

By the end of this course, participants will:

- submit a "boxed" Entry 4
- videotape a lesson, examine their videotaped lessons for evidence of accomplished teaching and determine the most effective methods for documenting this evidence
- apply strategies of effective videotaping to improve early attempts of capturing video evidence of their teaching

- understand what is expected in the video entries in order to analyze their own video samples and provide evidence of accomplished teaching
- consider what is needed to complete entry one in order to justify their teaching practices as an example of accomplished teaching
- be able to successfully review reader comments and apply strategic revision to their portfolio entries
- be prepared for the assessment center component of the certification process

### **Project-Based Learning in the 21st Century Classroom**

This course is designed to familiarize participants with the principles of Project-Based Learning (PBL), and strategies for implementing PBL projects in their classrooms. Throughout this seven-week course, exemplary projects will be analyzed, critiqued, and evaluated for applicability to participants' classroom needs. Participants will gain hands-on experience developing collaborative, inquiry-based projects that support their curricular goals. Participants will learn to blend PBL and standards-based design strategies to create curriculum units that enhance student learning. Each participant will leave the online course with a detailed plan for a PBL project.

### **Rubrics Used for Student Assessment**

This course is designed for classroom and special education teachers who want to increase their knowledge and skills in building and using assessment rubrics to aid in students' understanding. Many rubrics used are checklists and while they may be useful, they often do not allow for growth of students. This course will address the need for teachers to be able to use the wealth of information available about assessment and rubrics and their knowledge of content to design rubrics that allow students to use the rubrics for self-assessment and reflection purposes. Formative rubrics will create understanding not only of the content being taught, but also of the performance standards being addressed and the quality of the work produced. Components of this course include readings, activities, and responses of participants to discussion topics as well as analyzing some already created rubrics. The midterm and final project involve identifying and describing performance indicators for specific content as well as creating two specific rubrics for student projects specific to participant's grade level and course.

### **Special Students in Regular Classrooms: Technology, Teaching, and Universal Design**

This course, co-developed by EDC and CAST (Center for Applied Special Technologies), provides an introduction to the concept of Universal Design for Learning (UDL), and strategies for implementing a UDL approach in instructional settings. Universal Design for Learning is an approach to teaching and learning and the development of curriculum and assessment that draws on current brain research and new media technologies to respond to individual differences. UDL curricula, teaching practices, and policies are inherently flexible and therefore may reduce the demand on educators to develop and implement modifications and accommodations to meet individual differences within general education learning environments.

The basic premise of UDL is that a curriculum should include alternatives to make it accessible and applicable to students, teachers, and parents with different backgrounds, learning styles, abilities, and disabilities in widely varied learning contexts.

This course is designed to acquaint participants with UDL principles, and provide practical, hands-on experience using software tools and digital media for learning support. Participants will explore how these tools can be incorporated into their classroom practice, and begin preliminary steps to design a curriculum unit that utilizes these tools.

### **Strategies and Tools for Implementing Lesson Study**

This course will introduce participants to a teaching activity in which educators jointly develop, teach, observe, analyze and revise lessons for their students. Lesson study participants will work together in teacher teams to build knowledge about how students learn and will produce a lesson that can be implemented in iterative stages by team members. Participants will view lesson study vignettes and complete the six steps of the lesson study process through access to a project template, a tool for Planning and Describing Lesson Study, and other online resources.

### **Standards Based Instruction**

The *Global21: Standards-Based Instruction* course provides professional development for all West Virginia educators and administrators, enabling them to develop and implement standards-based instruction in their classrooms. Participants will engage in course readings, activities, discussions and a course project. Course content is centered on the new West Virginia 21st Century Content Standards and Objectives, Learning Skills and Technology Tools. At the end of the course, participants will submit an instructional plan.

### **Supporting Instruction with Web 2.0 Tools**

In this course, participants will investigate Web 2.0 tools for teachers and students, will explore how a variety of these tools can be and are being used as educational tools and will determine what tools they can use to enhance students' learning as they develop a 21st Century instructional plan for use in their classes.

### **Using Digital Portfolios to Enhance Student Learning**

This seven-week course helps K-12 teachers assist students in the creation and development of digital portfolio projects to enhance learning in content area classrooms. Participants will explore various readings, complete learning activities, participate in on-line discussions, examine various types and purposes of portfolios, and examine assessment strategies for evaluating portfolio projects.

### **Using Technology to Support Research and Presentation**

In this course, participants will explore technology tools and resources that can support research and presentations across all subject areas at the middle and high school levels. Participants will learn about electronic tools to support brainstorming and concept mapping,

locating relevant information resources, organizing and analyzing information, and preparing presentations and reports. By the end of the course, participants will have completed a plan that guides students through the research process and includes strategies for integrating technology into each phase of the research process, as well as a rubric for evaluating student presentations

### **Using Web Quests**

This course is designed for K - 12 teachers as an inquiry-based instructional tool for classroom use. Participants will create a web-based lesson for students that utilizes higher-order thinking skills, collaborative learning, and pertains to a unit or lesson from their curriculum. Participants will gain knowledge and skills in implementing technology in the classroom. Participants will create a WebQuest online at <http://www.zunal.com>. The WebQuest project is to be designed to engage students in the application of 21st Century Learning Skills and 21st Century Technology Tools.

### **Utilizing a Mentoring Program**

Mentoring is an effective way of keeping new teachers in the profession. Coaching is an essential tool the mentor uses to help new teachers develop expertise. Coaching involves being non-judgmental, helping teachers to solve their own challenges, and using data collected during observations to help new teachers solve problems that they have identified. This course will provide the trained mentor with additional practice in coaching techniques to they can be more effective at guiding new teachers.

### **WebTop: the West Virginia K-12 Education Portal for 21st Century Learning**

WebTop is the WVDE web portal which provides West Virginia educators with 21st Century tools. It combines third party tools (such as Google Docs, Google Sites, Google Calendar, ePearl, Twiddla, Manhattan, and WebTop Communities) as well as web applications developed by WVDE.

By the end of this course, participants will understand:

- how the WebTop promotes Global 21 initiatives.
- how Google Docs enables collaboration.
- how Google Sites promotes 21st Century communication and collaboration.
- how ePearl facilitates balanced assessment.
- how Google Calendar and Twiddla provide 21st Century tools for communication and collaboration.
- how Manhattan promotes 21st Century Learning Skills for Global 21 learners.
- how WebTop Communities support the role of the teacher as a Global 21 educator.

## ***Courses for Elementary Teachers***

### **Algebraic Thinking in the Elementary School**

This course provides teachers of grades 3 through 5 with an opportunity to explore how activities that foster algebraic thinking can be integrated into the elementary classroom. Algebraic thinking consists of more than just learning how to solve for the variables  $x$  and  $y$ ; it helps students think about mathematics at an abstract level, and provides them with a way to reason about real-life problems. In this course, participants will explore three components of algebraic thinking: making generalizations, thinking about the equals sign, and being able to reason about unknown quantities. As participants stretch their own algebraic reasoning skills, they will also spend considerable time thinking about how to integrate algebraic tasks into their own classroom instruction. This course uses readings, video, online discussion boards, a final project, and engaging mathematics problems to promote the idea that the incorporation of algebraic thinking tasks in elementary school mathematics is critical to students' future success

### **The Complexities of Measurement**

This course, *The Complexities of Measurement*, will give participants an understanding of common misconceptions students have about measurement and will provide teachers some tools and strategies to help students improve their conceptual understanding of this topic. Participants in this course will explore why it is important to study measurement in the upper elementary grades as well as why teachers need to pay particular attention to the ideas of unitization and iteration. In the final project for this course, participants will design activities for their students that promote a conceptual understanding of measurement and which are immediately useful in the classroom.

### **Integrating Literacy and the Life Sciences**

Participants in this course will learn about the structures and behaviors of organisms that enable them to live successfully in their environments and how this scientific content can be enhanced through literacy integration. A focus of the workshop is to help participants learn to integrate literacy and science by using literacy strategies such as science notebooks/journals, concept maps, and literature to enhance their lessons. A notebook strand in several sessions provides more information and ideas about teaching with science notebooks. In addition, participants will hone their content knowledge about the basic needs of living things, habitats, interactive relationships, food webs and adaptations. As part of the work in this course, participants will learn to keep their own science notebook and complete a Final Project, which includes a reflection on the investigations in the notebook

### **Promoting Reading Comprehension Skills in the Elementary Classroom**

Research on reading comprehension has demonstrated that readers differ in how they approach reading and the meaning they construct from text. Researchers have found that good readers use specific strategies to comprehend text, and those instructional programs that explicitly teach these strategies have been successful in improving students' comprehension. In this course, participants will examine teaching practices that help students in grades three through five develop concrete strategies for constructing meaning from both narrative and

expository text. The goal for strategy instruction is to prepare students to become active and purposeful readers who think about their text before, during and after reading. Participants will also explore instructional procedures that help students learn how to coordinate key comprehension strategies.

### **Reading First: Supporting Early Reading Instruction with Technology**

The Reading First initiative, as defined in the No Child Left Behind legislation, is based on the findings of the National Reading Panel. This course, co-developed by EDC and NEIRTEC (Northeast and the Islands Regional Technology in Education Consortium), one of ten regional technology in education consortia funded by the U.S. Department of Education, provides a review of the five key areas in early reading instruction as defined by Reading First--phonemic awareness, phonics, fluency, vocabulary, and text comprehension--and explores how technology can best support reading instruction. The course also includes an introduction to DIBELS (Dynamic Indicators of Basic Early Literacy Skills), a set of standardized measures of early literacy development. Course participants will review several software packages that can be used with early readers and develop strategies for integrating technology appropriately and effectively in early reading instruction.

### **Supporting Literacy Development in Lower Elementary Classrooms**

In this course, participants will explore how technology can support emerging literacy development in kindergarten through second grade. Participants will investigate tools that can help build phonemic awareness and word recognition. Participants will also explore strategies for integrating reading and writing with meaningful project-based activities, and learn about software tools for publishing student work and creating class books. Participants will develop ideas for a technology-enhanced lesson plan, and collect a number of resources for immediate classroom use.

### **Supporting Literacy Development in Upper Elementary Classrooms**

In this course, participants will learn about technologies that can be used to strengthen teaching and learning in many aspects of literacy development in upper elementary classrooms. The content covered includes many ways to use technology to support a variety of approaches to developing students' literacy, including developing vocabulary, framing ideas for writing, promoting critical research skills, facilitating revision processes and teacher and peer editing, and publishing final products. During this course, participants will develop a technology-enhanced lesson that addresses national and local literacy standards. To support this lesson development process, participants will examine a sample lesson plan that incorporates several ways technology can support reading and writing across the curriculum. Participants will also discuss strategies for the ongoing assessment of students' literacy development.

### **Teaching Writing in the Elementary Classroom**

All students have the capacity to be good writers and writers learn to write by writing. These are basic tenets of this course during which participants will learn instructional strategies to teach

students in the upper elementary grades how to write narrative and informational text. Participants will explore how to teach their students about the traits of good writing through mini-lessons and writing conferences and how to use established criteria to evaluate writing. They will recognize that writing is a process and consider how to organize instruction to guide students through the stages. Participants will go through the instructional cycle from writing prompt to revision as they create their final projects.

### **Using Models to Understand Fractions**

This course provides an opportunity for teachers of grades 3 through 5 to explore how mathematical models can be used to promote a deep understanding of fractions and fractional relationships. All too often, students are taught mechanical ways to make sense out of fractions, whether in the form of an addition algorithm or a procedure that produces equivalent fractions. This course offers alternative ideas for fraction instruction and is premised on the belief that students can come to understand fractions in a number of different ways. Completion of a student interview and a final project are integral parts of this course. A variety of readings, applets, and videos form the content of this course, and participants are expected to share ideas with their online colleagues in the discussion forums.

### **Using Observable Phenomena to Make Sense of the Earth, Moon, and Sun**

In this seven-week course, participants will learn to use scientific inquiry to foster exploration—and ultimately understanding—about the movements of the Earth, moon, and sun, phenomena that have fascinated mankind for thousands of years. Since state and national science standards call for teaching elementary students about day/night cycles, seasons, and the phases of the moon, this course helps teachers learn to employ strategies to make this content meaningful and accessible for young students. This course is written from an inquiry standpoint; therefore, participants will work to construct their own knowledge about natural phenomena (through the use of shadow trackers and moon journals) as they learn how to integrate inquiry strategies into classroom instruction. Specific content knowledge, such as learning the reason for day/night cycles, phases of the moon, and the reasons for seasons are integrated into this course. Additionally, participants will learn how to facilitate inquiry-based learning in their classroom, from thinking about why inquiry is important to posing questions that promote discovery. Content-rich articles, video clips, and online resources will form the background of the course; and asynchronous discussion boards will promote participant interaction, communication, and learning. Participants will be expected to complete and submit a Final Product by the end of the course.

### **Using Technology in the Elementary Math Classroom**

In this course, participants will explore new technologies that can be used in elementary math instruction in kindergarten through sixth grade. Participants will review NCTM and state standards and examine the ways in which tools like virtual manipulatives, calculators, spreadsheet programs, online data sources, and applets can support these goals. In particular, the course will address ways in which technology can support elementary algebra, geometry,

number and operation, and data analysis standards. Participants will leave the workshop with a lesson plan that integrates new technologies into instruction in their own classrooms.

### **Vocabulary Instruction in the Elementary School**

In this course, participants will examine best practices for direct vocabulary instruction in order to build the breadth and depth of students' vocabulary for both comprehension and written expression in grades three through five. Participants will learn the importance of creating a word-conscious learning environment that encourages motivation and interest in learning new words. Participants will learn how to model and encourage independent word-learning strategies that students can apply while engaging in wide and varied reading. They will also explore the value of instructing students to infer the meaning of words from context and word parts. For their final project, participants will incorporate components of a balanced vocabulary program by designing a vocabulary lesson based on a classroom text—either fiction or non-fiction.

## **Courses for Middle School and High School Teachers**

### **A Conceptual Introduction to Function: Using Visual Models**

This course, *A Conceptual Introduction to Function: Using Visual Models*, will help middle school teachers learn approaches to teaching functions using visual models. Participants in this course will become familiar with strategies to help students develop a strong conceptual understand of functions and with tasks that allow students to explore situations of both linear and non-linear functions. Participants will also engage in creating classroom tasks to help students make connections between multiple representations of functions. Participants will evaluate a variety of applets throughout this course, and they will conduct an interview with a small group of students about their experiences using an applet. In the final project for this course, participants will design a lesson plan using an applet to explore the concept of function.

### **Geometric Measurement**

In this course, *Geometric Measurement*, designed for teachers in the middle and high school grades, participants will become familiar with relevant research in teaching geometric measure and learn how to analyze student work to inform their instruction. They will complete classroom tasks designed to help them learn approaches to teaching geometric measurement to help students develop stronger conceptual understanding and procedural knowledge, especially in linear measurement, area, surface area and perimeter. They will also explore relationships between perimeter and area and between area and surface area. In addition, they will become familiar with virtual manipulatives designed to promote both conceptual and procedural knowledge around geometric measurement. For the final project, participants will complete a lesson plan, based on their analysis of student work on geometric measurement tasks, for use in their own classrooms.

### **Getting Ready for Algebra by Using Virtual Manipulatives**

There is substantial evidence to suggest that a solid foundation in algebra provides a gateway

to the higher levels of mathematics necessary for success in higher education, technological or scientific occupations, and business applications. Given this reality, as well as the increased focus on accountability and high academic standards, many schools and districts have instituted policies that require all students to complete algebra as a requirement for high school graduation.

In response to the accountability measures outlined in the No Child Left Behind Act of 2001, the Southern Regional Education Board (SREB) worked with a panel of teachers and experts from the Educational Testing Service (ETS) to develop [17 Algebra I readiness indicators](#), including the 5 "process" indicators and the 12 "content and skills" indicators. This course is structured around the 12 content and skills readiness indicators and will introduce a collection of virtual manipulatives that will help curriculum planners and classroom teachers meet the demand to prepare students for Algebra I.

Participants can download and use all of the activity sheets in this workshop with students at their school. As a final product, participants will develop a technology-enhanced lesson that is aligned with the SREB algebra readiness indicators.

### **Helping Struggling Readers Improve Comprehension**

This course focuses specifically on supporting the academic development of students who are competent decoders but who struggle to understand the meaning of what they read.

Participants will explore the different types of comprehension difficulties students may face and will explore a number of research-based strategies to improve comprehension skills.

Instructional strategies will focus on building vocabulary skills, using teacher modeling, having students work collaboratively and building comprehension monitoring skills. As a final project, participants will design and implement a lesson plan focused on improving students' reading comprehension.

### **Improving Reading and Writing in the Content Areas**

In order to be successful in content area classes such as social studies, science, and mathematics, students must be able to read a variety of informational texts and produce written documents. This course will give teachers the tools they need to integrate literacy strategies into content learning to help raise student achievement. Participants will use the Literacy Matters web site as an anchor throughout this workshop for exploring instructional strategies. By the end of the course, participants will be able to locate web-based tools, strategies, and lessons that foster literacy skills in all content areas. They will also have developed a preliminary lesson plan incorporating these tools and strategies.

### **Incorporating Primary Sources in the Social Studies Classroom**

There is a tremendous wealth of web-based resources that support active learning and primary research in the middle and high school social studies classroom. Participants in this course will explore the range of available resources including newly accessible collections of original documents, vast reservoirs of secondary historical information, and online resources designed to support social studies teachers in curriculum development. Participants will consider effective

research strategies and engage in critical analysis of web resources. Participants will complete the course having developed a collection of project ideas to serve their particular curricular goals

### **Inquiry in the Science Classroom Using Internet-Based Data Sources**

In this course, participants will explore the use of online data sources to enhance inquiry-based teaching and learning in the science curriculum. The National Weather Service and NASA are just two of the organizations now providing K12 educators with both historical and real-time data from around the world. By using the Internet as a link to the data, students can participate in building meaningful models that will assist them in gaining a better grasp of both local and worldwide science issues. In many cases, students become part of a worldwide network of investigators by adding their local findings to a larger database. The National Science Education Standards emphasize the use of these types of technologies in Content Standard A, which reads, "Scientists rely on technology to enhance the gathering and manipulation of data. New techniques and tools provide new evidence to guide inquiry and new methods to gather data, thereby contributing to the advance of science. The accuracy and precision of the data, and therefore the quality of the exploration, depends on the technology used." As a final project, participants will develop plans for a lesson plan that utilizes an Internet-based data source

### **Making the Most of Adolescent Literature**

When teachers integrate adolescent literature into the curriculum, students are given an opportunity to learn about themselves and the world during a critical time in their development. Recent research on reading development suggests a growing number of evidence-based practices that can help students with the complex process of reading to make meaning. In this course, participants will learn how to select literature for students of varied needs and how to improve students' reading comprehension through questioning techniques. They will also explore a wide range of literature response strategies and techniques for assessment. Throughout the course, participants will use the Literacy Matters web site as a source of information about adolescent literature. As a final product, participants will create a classroom lesson based on the strategies learned in this course.

### **Promoting Reading Comprehension Skills in the Middle School Classroom**

This course will help middle school teachers learn about comprehension strategies that students need to apply in order to comprehend a variety of text types. Participants will explore the challenges students commonly experience with different types of text, strategies employed by successful readers and instructional approaches to support students in developing reading comprehension strategies. Throughout the course, participants will gather ideas about designing a lesson plan that focuses on developing students' use of comprehension strategies. Participants will leave this course with many new strategies and resources for fostering the reading comprehension of their students.

### **Proportional Reasoning**

In this course, participants will learn about different components and levels of proportional reasoning. They will complete classroom tasks that illustrate ways to develop stronger conceptual understanding and target different components of proportional reasoning. They will use video and written examples of student work. They will also conduct a student interview in order to reflect on students' approaches to proportions problems and to identify evidence of proportional reasoning at various levels. For the final project, participants will create a lesson that targets a component of proportional reasoning and that incorporates questioning techniques learned in the course. They will provide a rationale for the lesson that relates to the material learned in the course and reflect on their own learning.

### **Strategies and Tools for Teaching the Writing Process**

Technology tools and web-based materials support teachers in meeting NCTE and ISTE standards in each stage of the writing process. These standards emphasize the appropriate use of writing strategies and technological resources to communicate with different audiences and with a variety of purposes. This course, designed to support middle and high school teachers of writing, will explore a range of web-based resources and exemplary projects which utilize technology to support these goals. Participants will learn about and experiment with technologies that can be used to facilitate each phase of the writing process (prewriting, writing, revising, publishing, and assessment). For example, participants will review and develop their own graphic organizers to support prewriting, learn about online writing mentor and tutorial resources, and be introduced to online venues for publishing student work. Participants will complete the course with a collection of resources and preliminary plans for a classroom writing project that utilizes technology to serve curricular goals.

### **Teaching Electricity and Circuits Through Inquiry**

Participants in this course will learn about the science behind electric circuits and how this content can be taught through inquiry. The course will help teachers gain a better understanding of electricity and circuits, including conducting and insulating materials, open and closed circuits, and series and parallel circuits. Participants will learn numerous inquiry-based teaching strategies throughout the course. They will consider inquiry-based methods to introduce the content to students, and they will enhance their questioning techniques to help students make predictions about the content. Participants will also learn strategies for managing inquiry-based lessons in the classroom and tools for assessing students' understanding of the content. Through completion of a final project, participants will demonstrate much of what they learned about the content and teaching methods described above.

### **Teaching Writing in the Middle School**

In today's middle school writing classroom, the pressures to achieve state and national standards are overwhelming for students and teachers alike. Many classrooms focus so completely on writing the perfect essay that the fun of writing wanes. In this course, participants will examine two common essay types—informative and persuasive—as they are approached in

several non-traditional ways. To complement these alternative ways of teaching these two essay types, this course will also re-examine the writing process, writing motivation for teachers and students, and formative evaluation methods for writing progress. The end result of this work is a final lesson plan for an informative or persuasive essay that utilizes a creative approach in its instruction. It is the overall goal of this course to rekindle motivation and creativity in middle school writing instruction to help teachers and students have some fun on their journey toward the perfect essay.

### **Using Models to Teach About Force and Motion**

This six-session online course, along with an orientation, guides participants as they explore the use of hands-on objects, models, and simulations to enable students to construct accurate conceptual representations of forces and motion. Participants will study an inquiry-based, constructivist science teaching model known as the 5E Learning Cycle, identify some characteristics and examples of each of the commonly recognized phases – Engagement, Exploration, Explanation, Extension (or Elaboration), and Evaluation – and develop an in depth 5E instructional lesson plan.

During the course, participants will search the web for relevant resources and instructional strategies for integration into each of the learning phases. The activities and readings in this course will help participants reinforce their own conceptual understanding of forces and motion, as well as locate and develop a variety of concrete physical, visual, graphic and computer representations, and abstract conceptual models to teach students with different learning styles and then assess the students' understanding of forces and motion

### **Using Patterns to Develop Algebraic Thinking**

This course is designed for middle-school math teachers, curriculum specialists, professional development specialists, or other school personnel. Over the course of six sessions, plus an orientation, participants will explore ideas and questions related to the nature of algebraic thinking, the relationship between mathematical thinking and algebraic thinking, and methods for encouraging the development of algebraic thinking in middle school students. The course will culminate in the development of a final product for participants to use in the classroom.

### **Using Probability for Decision Making**

This online course is designed primarily for middle-school mathematics teachers. During the six sessions and an Orientation Session, participants will explore ideas and questions related to enhancing students' understandings of and abilities to apply an understanding of probability to everyday problem solving. The course will culminate in the development of a lesson plan including a list of strategies and annotated resources participants plan to use in their classrooms.

### **Using Real Data in the Math Classroom**

Real-world data are a glimpse into a complex story that involves much more detail than the

numbers would suggest. We want students to look "behind the scenes" by organizing, representing and analyzing these data. Technology is central to this task, both as a source of data and as a tool for data analysis. Technology tools and web-based materials provide important ways for math educators to meet key NCTM and ISTE standards that emphasize problem solving and making connections between mathematics, other disciplines and the real world. These standards include a significant emphasis on representing and analyzing data, including a focus on being able to evaluate the sources of data and the effectiveness of different representations that students will encounter both inside and out of school. This course will explore a range of web-based resources and exemplary projects which utilize technology to support these goals. Participants will learn how to find sources of real data on the Web and explore how technology tools such as spreadsheets can help students analyze, visualize and make sense of these data. Participants will complete the course with a collection of resources and beginning project ideas that serve their curricular goals. "Technology is essential in teaching and learning mathematics; it influences the mathematics that is taught and enhances students' learning." - NCTM Standards, 2000 "Books, newspapers, the World Wide Web, and other media are full of displays of data. ... As students deal with larger or more complex data sets, they can reorder data and represent data in graphs quickly, using technology so that they can focus on analyzing the data and understanding what they mean." -NCTM Standards, 2000

### **Vocabulary Instruction in the Middle School**

This course will expand participants' understanding of vocabulary development and instructional techniques that are effective in helping students in grades six through eight expand their vocabularies. Participants will learn how to assess students' vocabulary knowledge and select words from a text that are most useful for instruction, including those with high-frequency Greek and Latin word parts. In addition, participants will have the opportunity to explore online resources for vocabulary development and assess their own current vocabulary teaching strategies. This course is designed to help teachers and other educators learn new ways to extend the vocabularies of middle school students.

## **Courses for School and District Leaders**

### **Data-Based School Reform**

Research indicates that effective school improvement plans should be based on careful analysis of school data. This course, developed by Education Development Center, Inc. (EDC) with assistance from The Principals' Center at the Harvard Graduate School of Education, provides an introduction to the process of using data to guide school reform. Course participants will review current data-driven decision-making theory; use technology to identify, gather, and analyze data for patterns and trends; examine the role of data in equity reform; and develop action plans in support of their school-based data.

### **Planning for Curriculum Integration of Technology**

Planning for curriculum integration of technology involves building models of teaching and

learning that are consistent with good educational practice. This course, co-developed by EDC and NEIRTEC (Northeast and the Islands Regional Technology in Education Consortium), one of ten regional technology in education consortia funded by the U.S. Department of Education, examines the role of administrators in engaging staff in discussions about good uses of technology. When technology is used well, student learning is focused on deeper understandings and connections to the world. School districts are investing heavily in technology for their teachers and students and are considering how technology can be used to maximize the learning conditions and experiences of their students. This course presents what good curriculum integration of technology looks like-and what it does not look like. Participants will use the research and practice of PCIT to assess their own school/district and to develop plans for improving uses of technology that work with current school/district initiatives. By the end of the course, participants will have worked with like-minded peers to identify goals for their schools/districts. They will have created action plans that describe success, strategies to monitor and evaluate progress, and ways to communicate most effectively with the stakeholders in the community.

### **Safeguarding the Wired Schoolhouse**

As the number of computers in schools and the number of children accessing the Internet from the classroom have grown exponentially over the past few years, so too have the challenges facing educators trying to ensure that children have a positive experience when they go online. Safeguarding the Wired Schoolhouse, co-developed by [NEIRTEC](#) (Northeast and the Islands Regional Technology in Education Consortium), the [Consortium for School Networking](#)(CoSN), and [SERC](#) (Satellite Educational Resources Consortium), is an online course designed to help school administrators understand their specific options for protecting children when they access the Internet over a school-based or statewide educational network. The course also provides essential information to help administrators understand the requirements of the new Children's Internet Protection Act, a piece of legislation passed in December, 2000 which mandates that schools and libraries receiving E-Rate discounts put Internet safety policies into effect that include filtering or blocking of online material considered harmful to minors. This course will enable educators to: 1) gain a better understanding of the issues related to Internet safety; 2) explore their own school/district's current approaches to protecting students online; and 3) formulate strategies for refining these approaches in light of current legislation and tried practice.

### **Smart Budgeting for Technology: An Introduction to Total Cost of Ownership**

It is imperative that educational leaders have the skills and knowledge necessary to respond to the multiple challenges of reduced budgets, increased accountability requirements, and growing concerns about the impact of technology investments in education. It is no longer sufficient to be knowledgeable about the installation of equipment, networks, software, and professional development models and resources, you must also have the skills and resources necessary to make strategic decisions about calculating costs, allocating resources, and projecting multiyear budgets. This Smart Budgeting for Technology course will provide appropriate, timely, targeted

# ***E-Learning* for Educators**

## Course Catalog



resources for technology budgeting; help you grapple with issues of fiscal accountability; provide a framework outlining the major considerations when budgeting for technology integration; and help you respond to the school board and community concerns about investments in educational technology.