

Building Your Technology Education and Skills®

Building Your Technology Education and Skills instructs teachers in the use of technology that facilitates classroom learning: computer basics, word processing, desktop publishing, databases, spreadsheets, quality teacher and student software, multimedia presentations, and the Internet. Educators practice using equipment such as scanners and digital cameras while creating materials for their classrooms.

To the right are the key areas of focus for the 45-hour course. For more information, refer to the syllabus, which provides a detailed outline of the course material as well as a bibliography of research on which the course is based.

In this course, participants will

- ▶ Identify basic computer techniques, including using Windows, manipulating a mouse, moving and saving material, navigating, and printing.
- ▶ Develop an understanding of basic word processing.
- ▶ Create items for their classrooms and schools using scanners, digital cameras, laminators, and color printers.
- ▶ Develop databases and spreadsheets for student use in the classroom as well as for participants' own record keeping.
- ▶ Develop criteria to assess teacher and student software in order to facilitate future software acquisitions.
- ▶ Discover how to create a multimedia presentation.
- ▶ Navigate the Internet, exploring sites of interest to students and teachers for research and learning.

Building Your Technology Education and Skills®

Course Description

Building Your Technology Education and Skills is a Performance Learning Systems® course designed to help experienced and beginner educators in all subject areas develop expertise in using technology as an effective tool to facilitate teaching, generate educational materials, manage classroom tasks, assess software, create presentations, communicate online, and access digital data via research done on the Internet. Through hands-on practice and the completion of specially designed projects with a direct application to each participant's own classroom, class members will harness the potential of technology to increase their productivity, enhance instruction, engage students, and create an active learning environment.

Course Outcomes

Upon completion of this class, the learner is expected to be able to:

1. Apply educational research to the topics of this course.
2. Identify, explain, and customize the elements of a computer desktop.
3. Demonstrate proficiency in word-processing tools and their application to classroom projects.
4. Apply the classroom uses of desktop publishing software and demonstrate the software's use in the classroom.
5. Use databases, their available features, and their classroom applications.
6. Identify and examine appropriate software and hardware to use in his/her classroom, the specific educational applications for it, and how it would improve teaching and learning.
7. Plan, create, implement, and evaluate a spreadsheet activity in his/her classroom.
8. Discuss the ways in which PowerPoint presentations address multiple intelligences (visual-spatial, bodily-kinesthetic, interpersonal, intrapersonal, logical-mathematical, musical-rhythmic, verbal-linguistic, naturalist) as well as a variety of learning styles (concrete-sequential, concrete-global, abstract-sequential, abstract-global, visual, auditory, kinesthetic, tactual).
9. Demonstrate a personalized classroom application of the PowerPoint software.
10. Use advanced strategies to refine an Internet search.
11. Identify, locate, and evaluate Web sites for teachers and students.
12. Create an action plan for implementing technology in his/her classroom, and explain how it will improve instruction, and the ways in which student learning will be positively enhanced.
13. Generalize course content to reflect how the multicultural and diverse populations within classrooms have their needs met by the application of the skills, strategies, and knowledge gained in this course.
14. Reflect on and continuously evaluate personal practice, adjust accordingly, and actively seek out opportunities to grow professionally using the knowledge and skills learned in this course.
15. Work collaboratively to share knowledge, skills, and experiences, refine understanding of content, give and receive feedback, and improve expertise.

Institutional Outcomes

(To be listed here)

Required Text

Selected research articles, research summaries, and topical articles drawn from educational literature

Topical Outline

List of Concepts

Overview

Research supporting the use of technology in education, overview of what computers can do for teachers, the operating system (OS), megabytes and gigabytes, ROM (read-only memory), RAM (random-access memory), types of computers (Macintosh or PC), hardware and software

Computer Basics & Customizing a Desktop

Setting up a computer, turning on a computer, input devices (keyboard, scanner, modem), the mouse and cursor, (types of mice, adjusting a mouse and cursor, clicking), the Windows desktop (icons, folders, taskbar, start button, control panel), the drag and drop function, storage drives (hard drive, CD-ROM, CDs, DVDs, PCMCIA cards, floppy drives), protecting data, using windows (minimizing, maximizing, restoring, closing), using the menu bar (File, Edit, View, Help), the recycle bin, creating shortcuts, customizing the desktop (wallpaper, screen savers, properties), copying a file from floppy to hard drive, changing themes, assigning sounds, assigning a sound from a floppy, recording sounds, using printers, checking printer settings, setting date and time, other control-panel options, shutting down

Fundamentals of Word Processing

Definition of “word processing,” using the cursor, highlighting text, deleting, cutting and pasting, copying, adjusting spacing functions (margins, ruler, tabs), using templates, justification, form functions (bold, italics, underlining, super- and subscript, fonts), page numbering, numbering and bullets, inserting graphics, checking spelling and grammar, saving, print preview, page setup, print purge, editing

Enhancing the Classroom With Desktop Publishing

Definition of “desktop publishing,” items teachers can create with desktop publishing, types of papers, hardware for placing photos in projects (scanners, digital cameras, video grabbers), using a digital camera, using software to create classroom projects, scanning, creating videos

Building Databases

Definition of “database,” terminology (file, record, field, field entries), using search strings, classroom applications of database technology, printing labels, using blank labels remaining on a sheet, creating a form letter

Choosing Student and Teacher Software	Criteria for choosing software; types of student software (drill and practice, tutorials, simulations, instructional games, problem-solving software, authoring software); software for teachers; criteria for productivity software; software for grading, lesson planning, designing rubrics, and worksheets
Developing Spreadsheets	Definition of “spreadsheet,” terminology (cells, values, formulas), classroom uses for spreadsheets
Creating Multimedia Presentations	Examples of PowerPoint presentations, definition of “multimedia,” items each slide may contain, slide backgrounds, animation effects, printing materials, creating a presentation, outline view, applying design, slide view, adding graphics, checking errors, testing the presentation, rehearsing and timing a presentation, getting help, PowerPoint quick tips, custom animation, adding sound effects
Utilizing the Internet	Understanding the Internet, parts of the Internet, getting connected, surfing, browsers, URLs, search engines, protecting students, creating an Internet-based lesson, classroom projects, customized home pages, email directories, free email accounts, newsgroups, chat sites, Buddy Lists [®] , virus protection, freeware, online resources for teachers (lesson plans, news, graphics, etc.).

Course Assessments and Links to Institutional Outcomes and Course Outcomes

Throughout the course, the learner will be assessed and evaluated on the completion of the following assessments. There are nine assessments in this course, for a total of 160 points.

		Points	Correlations With Institutional Outcomes	Correlations With Course Outcomes
Assessment No. 1:	Customizing the Desktop to Assist Special Needs Student	10		2
Assessment No. 2:	Reflection Journal	5		12, 13, 14
Assessment No. 3:	Application of Word® Basic Skills to Create Documents	10		4, 5, 12, 15
Assessment No. 4:	Using Desktop Publishing Software to Solve an Instructional Challenge	30		4, 6, 12
Assessment No. 5:	Using Desktop Publishing to Motivate and Encourage Students	30		1
Assessment No. 6:	Classroom Applications for Database Software	10		1, 7, 12, 13, 14, 15
Assessment No. 7:	Classroom Applications for Spreadsheet Software	30		4, 8, 12
Assessment No. 8:	Article Review and Presentation	10		4, 9, 10, 12
Assessment No. 9:	Classroom Application of PowerPoint Software	25		4, 11, 12, 15
Total		160		

Criteria specific to each assessment will be explained in conjunction with the instructional activities.

Instructional Materials

Instructors and learners will use instructor-generated materials, learner-generated materials, print resources, and Web-based resources to facilitate learning.

Instructional Methodology

The instructional methodology of this course focuses on developing, enhancing, and improving the instructional expertise and pedagogical knowledge base of practicing educators. Strategies include instructor presentation of new content through short lecturebursts, active construction of knowledge during hands-on practice and problem solving, collaborative group work, personal reflection, in-class presentations and demonstrations, ad hoc and structured small-group or whole-class discussion, analysis of assigned reading, and application of course content and skills to each participant's individual grade level, subject area, and classroom.

Evaluation

The evaluation of learner work will be based on the defined criteria for learner assessments, which will be processed with learners prior to their instructional activities and engagement with the student learning targets (outcomes). Grading is based solely on the evaluation of student learning targets and defined criteria for learner assessments.

Formative assessment of learning outcomes is conducted throughout the course, using a variety of means that include the following: completion of assessments; constructive contributions to class discussions (whole-class as well as small-group); sharing of valuable, pertinent, and/or applicable ideas and experiences; involvement in the inductive process; interactive journal entries with written instructor feedback; critical or reflective responses to assigned readings; oral discussions in a whole-class or small-group setting; active participation and general attentiveness to the instructor and others. It is expected that each student will contribute to the academic quality of the course.

Summative assessment includes the completion of a culminating assignment that requires the participant to synthesize class content, apply it to his or her specific teaching situation, and complete a reflective action plan for implementing the major components of content and skill acquired during the course.

Grading Policy

(To be listed here)

Absence and Tardy Policy

(To be listed here)

Performance Learning Systems' Academic Integrity Policy

Performance Learning Systems expects absolute academic honesty and integrity from every course participant. The specific Academic Integrity and Honor Code Policies of our partner colleges and universities are embraced and enforced by PLS instructors. The following are considered to be serious violations:

- Plagiarism: the use of another's ideas, data, or words without proper acknowledgement.
- Fabrication: the use of invented information or the falsification of research or other findings with the intent to deceive.
- Collusion: improper collaboration with another in preparing assignments or projects.
- Cheating: an act of deception by which a student misrepresents that he or she has mastered information on an academic exercise that he or she has not mastered.
- Academic Misconduct: tampering with grades, or taking part in obtaining or distributing any part of student work that is not his or her own.

Violation or suspected violation will be investigated and pursued according to specific college/university procedures.

Identity Authentication

The college/university, Performance Learning Systems (PLS), and students share a joint responsibility to ensure that each student's contribution in an online course activity comes from that student alone. For the student, this responsibility has two parts:

1. Students are responsible for positively ensuring that every contribution to an online course created with the students' computer account is made by the student

- alone. Contributions covered under this policy include: written assignments; quiz and exam submissions; discussion forum postings; live participation in text-based chat sessions, phone conferences, and videoconferences. If a student allows another person to write or make any kind of submission to an online activity in the student's name, then this constitutes cheating and will be treated as a violation of academic honesty.
2. Students are responsible for ensuring the integrity of their computer account security by following the actions required of them by the PLS Acceptable Use Policy. These actions include keeping passcodes private, updating passcodes when required by Performance Learning Systems, and reporting breaches of the security policy to the IT Helpdesk.

Participant Professionalism Policy

As a courtesy to other participants and to your instructor, please refrain from text messaging, checking e-mail, or answering your cell phone during class time. Breaks are provided throughout the course so you can attend to personal matters. Using your personal electronic devices during class time is distracting and disrupts instruction and participant communication and collaboration. If you have an emergency or justifiable reason to leave your cell phone turned on during class time, please make arrangements with the instructor prior to the beginning of class.

Course Outcome Correlations With INTASC Standards for Teachers

	Course Outcomes
Standard 1: Subject Matter The teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches and can create learning experiences that make these aspects of subject matter meaningful for students.	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Standard 2: Student Learning The teacher understands how children and youth learn and develop, and can provide learning opportunities that support their intellectual, social and personal development.	3, 4, 5, 6, 7, 8, 9, 11, 12, 13
Standard 3: Diverse Learners The teacher understands how students differ in their approaches to learning and creates instructional opportunities that are adapted to diverse learners.	1, 4, 5, 6, 7, 8, 9, 11, 12, 13, 15
Standard 4: Instructional Strategies The teacher understands and uses a variety of instructional strategies to encourage students' development of critical thinking, problem solving, and performance skills.	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Standard 5: Learning Environment The teacher uses an understanding of individual and group motivation and behavior to create a learning environment that encourages positive social interaction, active engagement in learning, and self-motivation.	3, 4, 5, 6, 7, 8, 11, 12, 13
Standard 6: Communication The teacher uses knowledge of effective verbal, nonverbal, and media communication techniques to foster active inquiry, collaboration, and supportive interaction in the classroom.	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
Standard 7: Planning Instruction The teacher plans and manages instruction based upon knowledge of subject matter, students, the community, and curriculum goals.	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
Standard 8: Assessment The teacher understands and uses formal and informal assessment strategies to evaluate and ensure the continuous intellectual, social and physical development of the learner.	4, 5, 6, 7, 11, 12, 13, 14, 15
Standard 9: Reflection and Professional Development The teacher is a reflective practitioner who continually evaluates the effects of her/his choices and actions on others (students, parents, and other professionals in the learning community) and who actively seeks out opportunities to grow professionally.	1, 6, 7, 9, 11, 13, 14, 15
Standard 10: Collaboration, Ethics, and Relationships The teacher fosters relationships with school colleagues, parents, and agencies in the larger community to support students' learning and well-being.	1, 5, 9, 11, 13, 14, 15

The Interstate New Teacher Assessment and the Support for Consortium (INTASC) standards were developed by the Council of the Chief State School Officers and member states. Copies may be downloaded from the Council's website at <http://www.ccsso.org>.

© Council of Chief State School Officers. (1992) Model standards for beginning teacher licensing, assessment, and development: A resource for state dialogue. Washington, DC: Author. <http://www.ccsso.org/content/pdfs/corestrd.pdf>.

Course Outcome Correlations With National Board of Professional Teaching (NBPTS) Five Core Propositions

	Course Outcomes
Proposition 1: Teachers are Committed to Students and Their Learning.	
NBCTs are dedicated to making knowledge accessible to all students. They believe all students can learn.	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
They treat students equitably. They recognize the individual differences that distinguish their students from one another and they take account for these differences in their practice.	1, 4, 5, 6, 8, 9, 11, 12, 13, 15
NBCTs understand how students develop and learn.	1, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15
They respect the cultural and family differences students bring to their classroom.	1, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15
They are concerned with their students' self-concept, their motivation and the effects of learning on peer relationships.	1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
NBCTs are also concerned with the development of character and civic responsibility.	1, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
Proposition 2: Teachers Know the Subjects They Teach and How to Teach Those Subjects to Students.	
NBCTs have mastery over the subject(s) they teach. They have a deep understanding of the history, structure and real-world applications of the subject.	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
They have skill and experience in teaching it, and they are very familiar with the skills gaps and preconceptions students may bring to the subject.	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
They are able to use diverse instructional strategies to teach for understanding.	1, 3, 4, 5, 6, 8, 9, 12, 13, 14
Proposition 3: Teachers are Responsible for Managing and Monitoring Student Learning.	
NBCTs deliver effective instruction. They move fluently through a range of instructional techniques, keeping students motivated, engaged and focused.	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
They know how to engage students to ensure a disciplined learning environment, and how to organize instruction to meet instructional goals.	4, 5, 6, 7, 8, 9, 12, 13, 14, 15
NBCTs know how to assess the progress of individual students as well as the class as a whole.	4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
They use multiple methods for measuring student growth and understanding, and they can clearly explain student performance to parents.	4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
Proposition 4: Teachers Think Systematically about Their Practice and Learn from Experience.	
NBCTs model what it means to be an educated person – they read, they question, they create and they are willing to try new things.	1, 6, 8, 9, 11, 12, 13, 14, 15
They are familiar with learning theories and instructional strategies and stay abreast of current issues in American education.	1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
They critically examine their practice on a regular basis to deepen knowledge, expand their repertoire of skills, and incorporate new findings into their practice.	4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
Proposition 5: Teachers are Members of Learning Communities.	
NBCTs collaborate with others to improve student learning.	1, 4, 5, 6, 7, 8, 10, 11, 12, 15
They are leaders and actively know how to seek and build partnerships	1, 4, 5, 6, 7, 8, 10, 11, 12, 15

with community groups and businesses.

They work with other professionals on instructional policy, curriculum development and staff development.

**1, 3, 4, 7, 8, 9, 10, 11, 12,
13, 14, 15**

They can evaluate school progress and the allocation of resources in order to meet state and local education objectives.

**2, 3, 4, 5, 6, 7, 11, 12, 13,
14, 15**

They know how to work collaboratively with parents to engage them productively in the work of the school.

6, 7, 9, 10, 11, 12, 13, 14, 15

Reprinted with permission from the National Board for Professional Teaching Standards, www.nbpts.org. All rights reserved.

Bibliography

- Barone, D., & Wright, E. (2008). Literacy instruction with digital and media technologies. *Reading Teacher*, 62, 292–302.
- Bell, A. (2007). *Handheld computers in schools and media centers*. Worthington, OH: Linworth.
- Borthwick, A., & Pierson, M. (Eds.). (2008). *Transforming classroom practice: Professional development strategies in educational technology*. Eugene, OR: International Society for Technology in Education.
- Brawner, C. E., & Allen, H. (2006). Future teachers' classroom applications of technology. *Computers in the Schools*, 23(1), 33–44.
- Breck, J. (2006). *109 ideas for virtual learning: How open content will help close the digital divide*. Lanham, MD: Rowman & Littlefield Education.
- Burns, M. (2006). Improving student writing through e-mail mentoring. *Learning and Leading with Technology*, 33(5), 38–47.
- Cowan, J. (2008). Strategies for planning technology-enhanced learning experiences. *Clearing House*, 82(2), 55–59.
- Darbyshire, P. (Ed.). (2005). *Instructional technologies: Cognitive aspects of online programs*. Hershey, PA: IRM.
- Domine, V. E. (2009). *Rethinking technology in schools primer*. New York: Peter Lang.
- Dreyfus, H. L. (2009). *On the Internet* (2nd ed.). New York, NY: Routledge.
- Fodeman, D., & Monroe, M. (2009). *Safe practices for life online: A guide for middle and high school*. Eugene, OR: International Society for Technology in Education.
- Forcier, R. C., & Descy, D. E. (2008). *The computer as an educational tool: Productivity and problem solving* (5th ed.). Englewood Cliffs, NJ: Merrill/Prentice Hall.
- Hamilton, J. (2008). *Electronic devices in schools*. Detroit: Greenhaven.
- Khan, B. H. (Ed.). (2007). *Flexible learning in an information society*. Hershey, PA: Information Science.
- Kitsis, S. M. (2008). The Facebook generation: Homework as social networking. *English Journal*, 2, 30–36.
- Lever-Duffy, J., McDonald, J. B., & Mizell, A. P. (2008). *Teaching and learning with technology* (3rd ed.). Boston: Pearson/Allyn and Bacon.
- Moeller, L., Huett, J. B., & Harvey, D. E. (Eds.). (2008). *Learning and instructional technologies for the 21st century: Visions of the future*. New York: Springer.
- Nworie, J., & Haughton, N. (2008). Good intentions and unanticipated effects: The unintended consequences of the application of technology in teaching and learning environments. *TechTrends: Linking Research and Practice to Improve Learning*, 52(5), 52–58.
- O'Brien, J. (2008). Technology: An integral part of students' learning and lives. *Social Education*, 7, 383–385.
- Orech, J. (2009). 11 tips for better laptop learning. *Technology & Learning*, 29(7), 36–37.
- Osit, M. (2008). *Generation text: Raising well-adjusted kids in an age of instant*

- everything*. New York: American Management Association.
- Shaffer, P. W., & Williamson, D. (2006). *How computer games help children learn*, New York: Palgrave Macmillan.
- Shariff, S. (2009). *Confronting cyber-bullying: What schools need to know to control misconduct and avoid legal consequences*. New York: Cambridge University Press.
- Sharma, P., Xie, Y., Hsieh, P., et al. (2008). Student learning outcomes in technology-enhanced constructivist learning environments: what does research show? *Educational Media & Technology Yearbook*, 33, 77–90.
- Shih, T. K., & Hung, J. C. (Eds.). (2007). *Future directions in distance learning and communications technologies*. Hershey, PA: Information Science.
- Slepkov, H. (2008). Teacher professional growth in an authentic learning environment. *Journal of Research on Technology in Education*, 41(1), 85–111.
- Smolin, L., Lawless, K., & Burbules, N. C. (Eds.). (2007). *Information and communication technologies: Considerations of current practice for teachers and teacher educators*. Malden, MA: Blackwell.
- Squire, K. D. (2008). Video game-based learning: An emerging paradigm for instruction. *Performance Improvement Quarterly*, 21(2), 7–36.
- Staudt, C. (2005). *Changing how we teach and learn with handheld computers*. Thousand Oaks, CA: Corwin.
- Tan, L. W. H., & Subramaniam, R. (2006). *Handbook of research on literacy in technology at the K–12 level*. Hershey, PA: Idea Group Reference.
- Ulman, J. G. (2005). *Making technology work for learners with special needs: Practical skills for teachers*. Boston: Pearson/Allyn and Bacon.
- Wiske, M. S., with Franz, K. R., & Breit, L. (2005). *Teaching for understanding with technology*. San Francisco: John Wiley.

