IDET 3100 – Educational Technology for Preservice Teachers in Schools

Texas A&M University - Corpus Christi
College of Education – Teacher Education – Educational Technology

Course Syllabus – Spring, 2017

Professor: Dr. Elwood
  e-mail: via BlackBoard course site (preferred)
  or susan.elwood@tamucc.edu

Office Hours:
  WebEX T, Th 12:30-2:30 pm; email for
  an appointment to WebEX conference is
  best. No webcam needed; may
  conference with internal speakers only;
  can share files and screens.

Course time frame and location:
  January 18 – May 5, 2017
  Blended course; limited face to face

  Face to face times possible W 12:30-
  2:30 pm (FC 252) or by 24+ hour
  advanced appointment via email to
  susan.elwood@tamucc.edu

I. DESCRIPTION

This field-based integrated course is designed to provide educators with an overview of basic resource
  tools and instructional methods to be considered when designing and developing educational technology
  integrated curriculum plans. This field-based infused seminar will look at basic integrated applications
  in creating electronic portfolios for all students. Aspects of online collaborative tools and their
  pedagogical implications in K-12 environments will also be incorporated.

Credit Hours: 1

II. RATIONALE

Integrating technology into meaningful learning experiences is of great importance in educational
  learning environments. More specifically, the TEKS and TExES competencies integrate technology into
  numerous curricular objectives. Integrating meaningful technology learning experiences into the
  preservice teacher site curriculum will help K-12 students, preservice teachers, teachers and college
  faculty incorporate a range of technology to enhance learning and teaching.

III. OBJECTIVES AND OUTCOMES

This field-based infused seminar is designed to enable you to:

- Communicate electronically and collaboratively with peers and mentor teachers to enhance
  curricular planning, instructional strategies and the use of technology
- Incorporate a range of technology to enhance teaching and learning
IV. INSTRUCTIONAL METHODS AND ACTIVITIES

Instructional methods and activities in this course include:

- Online experiences (discussion threads, collaborative documents, instructional delivery, experiential/exploratory discovery, mentoring)
- Face to face experiences (lecture/discussion, demonstrations, student presentations, mentoring)

V. ASSIGNMENTS

*Note: Submission of assignments will generally be through your BlackBoard course *with* links to any online creations.

Items Due:

1) *Course Intro, Syllabus Quiz, and Intro Survey*: You will be asked to complete an introductory slide as your part to a combined student roster for this course. You will also be asked to review a few tools that you may use in your Technology Integrated Experience (TIE) activity or lesson that will be outlined in your introductory slide. A syllabus quiz and course intro survey complete the first phase of course requirements.

2) *Copyright Quiz & Poster*: The major component of this assignment is the reading and absorption of copyright laws as they pertain to K-12 education.

   a) Complete a copyright quiz, which will be open for only a 24-hour period. Mark this date in your calendar as the quiz will not be reopened under any circumstances.

   b) Produce a poster of the top 10 current copyright rules for the students in your current or future classroom. Instruction is provided in a PowerPoint so be sure to save these instructions for your future use. Your poster must be absolutely unique!

3) *Tech Specs Assignment*: You will gather information regarding the technology available in your field-based classroom and school. These facts will be helpful as you plan the lessons you will teach. In addition, some of this information will be needed for your TIE Planning Post assignments. Information required includes number and placement of computers, software versions, lab availability, Internet access, etc. Complete instructions are provided in the course materials list.

4) *Workshop participation*: You will experience a sample classroom Technology Integrated Experience (TIE) project on TAMUCC’s campus. Come prepared by bringing at least one TEK that you plan on implementing into a future lesson plan at your site. Show this in hard-copy form to me as you sign in to the workshop no later than 5 minutes before the workshop begins. If your cooperating teacher isn’t able to specify a date and TEK before the workshop, then please request a scope and sequence for a particular week or at least the six-week session in which you’ll teach your field-based lessons. Bring with you the completed Tech Specs assignment for reference.

5) *Individual Planning Review*: You will show substantial final draft preparation of your TIE plan discussion thread needs by the time of your site visit or WebEX group presentation times. (See Bb course content related section for the schedule.) Show your lesson plan and TIE prepared documents. Express any concerns related to the completion of your TIE for classroom implementation. To receive full participation points for this, you must attend both the session *before* you as a listening ear and
collaborative idea generator and your session as active presenter focused on your TIE activity development. Sign up for a time under the related course content Bb area.

6) **TIE Planning Post:** Completion of this assignment will include the planning and implementation of an approved technology into one of your preservice teacher site lesson plans or as a separate activity. This needs to include hardware and/or software new to you. PowerPoint is NOT considered a TIE activity! Any non-approved implementation may result in your having to conduct another activity or lesson. Include your plan and introductory student files in your first reflective discussion post regarding this TIE Active Participation lesson in which students will actively use technology (higher-level VoiceThread reflections, Google Drive collaborative documents or presentations, etc).

7) **TIE Product & Reflection Post:** Your second discussion thread entry regarding this lesson or activity will include completed student artifacts linked within your second discussion thread entry as well as a personal reflection as to what worked well, lessons learned, and Higher-Order Thinking challenge question(s) for peers reviewing your thread.

8) A **Course Exit Survey** completes the course requirements.

**Communication Guidelines**

The BlackBoard Mail tool is recommended for most private communication within the course. When contacting your instructor or your co-learners in the course, always use the BlackBoard Mail tool for course related communications rather than another personal e-mail account (e.g., Yahoo or Google email). This will allow the instructor and your co-learners to access assignments, questions, and course material more efficiently.
VI. EVALUATION / GRADING and DUE DATES

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
<th>Est.% of grade</th>
<th>Due Date by midnight; location, if other than online</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Intro Slide, Syllabus Quiz, Course Intro Survey</td>
<td>30</td>
<td>6%</td>
<td>Syllabus Quiz – F, January 20th&lt;br&gt;Intro Slide – M, January 23rd&lt;br&gt;Intro Survey – W, January 25th</td>
</tr>
<tr>
<td>Copyright Quiz &amp; Poster</td>
<td>100</td>
<td>20%</td>
<td>Wednesday, January 25th (poster)&lt;br&gt;Friday, January 27th (quiz)</td>
</tr>
<tr>
<td>Tech Specs</td>
<td>25</td>
<td>5%</td>
<td>Wednesday, February 1st</td>
</tr>
<tr>
<td>Workshop</td>
<td>100</td>
<td>20%</td>
<td>*Pre-workshop reading and case scenario activity-Wednesday, Feb 8th&lt;br&gt;*9 am –noon; Day/Time TBA; TAMUCC; see Bb announcements for location; bring a laptop if possible with WiFi, username, password to TAMUCC network READY</td>
</tr>
<tr>
<td>Individual (1-1) Plan Review</td>
<td>70/145</td>
<td>14%</td>
<td>All reviews onsite, unless WebEX conference is requested. Check your Bb Course Materials section for related sign-up information after the workshop.</td>
</tr>
<tr>
<td>TIE Planning Post / (Discussion Thread / Forum)</td>
<td>75/145</td>
<td>15%</td>
<td>48 hours BEFORE lesson is taught; 11/26 ultimate deadline</td>
</tr>
<tr>
<td>TIE Product and Reflection Post (Discussion Thread / Forum)</td>
<td>100</td>
<td>20%</td>
<td>Within 24 hours after lesson is taught; 4/25 ultimate deadline; 5% final grade bonus if on or before 4/21. Complete course post-survey.</td>
</tr>
<tr>
<td>TOTAL</td>
<td>500</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Course Intro, Syllabus Quiz, Course Intro Survey Rubrics (30 pts)
1. __/5 Average head/shoulder shot of YOU only is the pic on the slide.
2. __/5 Information template respected and completed.
3. __/10 Two to three initial ideas for TIE projects shared via the links you discovered in the initial TIE planning ideas “resource site” link. Include the Bloom's level, general tool link, and specific link to an example for each unique tool idea. Collaborative applications in which students collaborate electronically are the focus! Note two peer names to whose slides you commented. If you are #3, comment to another peer’s idea(s). (“Insert / comment” on the slide itself.)
4. __/5 Syllabus quiz
5. __/5 Course intro survey

Copyright Poster Rubric & Quiz Post (100 pts)
1. __/20 Poster technical directions followed as provided. File attached as one slide.
2. __/30 Information on poster spans current copyright law and at least three different types of media. Information is detailed per appropriate grade level student. At least ten unique facts are provided. Poster worded to student audience.
3. __/10 Poster is neat in appearance; no grammatical errors. No excessive white space or large fonts.
4. __/30 The message area contains summative, major points with the following subtitles after the “Copyright in my future classroom” title: Images; Videos; Text; Sounds. Links to specific, referenced websites are given by URL shorteners (bitly.com, tinyurl.com, goo.gl, etc). Links are to more grade level info and fair use resources, such as
images, sounds, and videos.
5. __/10 Copyright Quiz. Base questions from study notes; study notes allowed; quiz timed.

**Tech Specs Rubric (25 pts)**

1. __/10 Drawing of room was completed on an electronic device and accurately depicts all available technology located within the room.
2. __/10 Specifications of all technology tools in classroom provided, including tool type, make and model, and what general software is used with that device.
3. __/5 List of additional available resources.

**Workshop Participation (100 pts)**

1. __/30 At least one content TEK per desired lesson focus printed and submitted as you sign in for the workshop. (You may have more than one TEK, if undecided upon the lesson to be taught. It is YOUR responsibility to communicate the need for a lesson date and TEK for this technology workshop, NO excuses. Scope and sequences are available at every campus.) Included on that print out are your top online application choices and ideas for integration into a lesson. (See Course Materials / TIE tools, Resources links.) Submit one hard-copy; keep the other for yourself during the workshop.
2. __/10 Your site-based lesson plan template is electronically accessible to you for the workshop.
3. __/30 Your positive and focused attention is given during all workshop activities. No electronic distractions witnessed.
4. __/30 The post-workshop discussion thread is completed as directed in the discussion thread directions within 24 hours of the workshop.

**Individual Plan Review (70 pts)**

1. __/10 Participation through a listening ear and collaborative voice given in full to the presenter before you.
2. __/20 Hard-copy of lesson plan with TIE related objective(s) and activities highlighted.
3. __/30 Electronic link to TIE activity readily accessible during your presentation. (Link to it as you’re listening to the presentation before you.) TIE activity needs to be in full final draft form, ready to take into the classroom.
4. __/10 Verbal overview of your TIE activity implementation. Be able to describe the classroom management plan as directly related to your TIE activity from the beginning to the end of the class time. Do not consume time with full descriptions of other simultaneous class activities.

**TIE Planning Discussion Post Checkbric & Directives**

You are to employ experiential and exploratory learning techniques by experimenting with various technologies, using provided help menus, manuals, web site searches, etc. “Various technologies” include any software or web-based applications that engage your students in the production or synthesis of knowledge or your CT’s readily available Smart Boards, iPads, etc. The students’ collaborative use of the classroom’s 3-5 computers is mostly commonly expected. You will then present your project within appropriate BlackBoard discussion threads. The purpose of this is to share your knowledge and discuss or demonstrate how your technology could be implemented into the classroom (Bloom’s Application).

Teams of two will be allowed, but you will need to demonstrate that each of you had unique responsibilities to the shared exploration by first proposing a team project plan to your instructor, following the checkbric guidelines below. The checkbric will apply individually for uniquely submitted work!
**TIE Planning Discussion Post Checkbric (75 pts)**

Planning documentation will be included in the TIE planning discussion thread. Note: Please copy/paste your document contents within the message area of the discussion thread post. NO FILE ATTACHMENTS for the planning document, unless you’re attaching one storyboard attached file.

1. **__/15 Lesson Framing:** Top of document must include your Name, School Site, Grade, Full Lesson Title (to give us a direct content reference), Cooperating Teacher, and Field-Basing Professor. Also include the hardware and software selections used in your TIE project, making careful note of (SmartBoard, iPad, etc), brand and model number, names and versions of software or applications, etc.

2. **__/30 HOTS in Tool Features:** Chosen tool(s) enhance(s) the learning objectives by using tool features well. Give specific descriptions as to how you will use the tool features for students’ higher-level thinking and processing during the TIE activity. For example: "Hyperlinks within the notes area of Google Presentation will link to the team's main informational resource used in answering their team's slide HOTS questions.

3. **__/15 Assessment:** Technology used addresses the linkage of the objectives to the assessment in relation to the use of the technology. Specifically describe how you will assess your lesson objectives with the use of the chosen TIE tools.

4. **__/5 Standards & Objectives:** Listed state standards and lesson objectives addressed. 1 or more appropriate TEKs (technology) standard(s) provided in addition to content standards in relation to the TIE activity. Use of color-coding by highlighting appropriate TIE lesson plan text expected.

5. **__/10 Scripts and storyboard:** Drawings and scripts for any “products” to be shown to students. These could simply be pictures of hand drawn images that are attached to your post. You could also link a Google Drive presentation with the images. (The Google Drive presentation is what was used in your introductory slide presentations. You would need to open your own account.) These are often enhancements to your storyboards created for the 1-1 planning sessions at your site after the workshop.

---

**TIE Product and Reflection Post Rubric (100 pts)**

1. **__/10 Planning Items:** All planning and initial implementation documents are gathered in one folder; compressed (right click / “zip” or “compress”) and attached to the post. These documents can be a combination of word-processed docs, URLs to collaborative tools and products, or images. Note: IF you used a Smart Board, iPad, or other piece of hardware: Include a video of you explaining the technology used to your peers in 3-5 minutes and demonstrates exactly HOW you used the technology in the lesson. Video is a separate attachment; NOT contained in the zipped folder above. (Attach both the video and the zipped folder in the discussion thread post. You may paste a URL / web address to your YouTube uploaded movie.)

2. **__/30 Student Finished Samples:** Include student-finished examples. Make sure you attach and/or hyperlink to students’ finished products. This could also include screen-shots (“print screen” pasted into a PowerPoint slide on a PC, or command+shift+3 on a Mac), pictures, or short videos focused directly on the computer screen.

3. **__/30 Personal Reflection:** Include a personal reflection as to what worked well, lessons learned, and three Higher-Order Thinking challenge question(s) for peers reviewing your TIE planning and implementation documents related to the collaborative nature of the tools or methods, including classroom behavior preparation. Include a “best promotion” picture of you in action during the lesson (with backs of students’ heads).

4. **__/30 Peer to Peer Reflections:** Your three peer-to-peer questions within your original submission are in relation to your planning and implementation of your TIE activity. Ask questions related to the planning process, specific features of tools used, or how to engage the students in greater higher-order-thinking through technology. Make sure you reflectively reply to three peer posts. If you are
#4, find another peer. This reflective process is worth gold!

## GRADE

<table>
<thead>
<tr>
<th>Grade</th>
<th>Final Points</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>450-500</td>
<td>90 – 100</td>
</tr>
<tr>
<td>B</td>
<td>400-449</td>
<td>80 – 89</td>
</tr>
<tr>
<td>C</td>
<td>350-399</td>
<td>70 - 79</td>
</tr>
<tr>
<td>D</td>
<td>300-349</td>
<td>60 - 69</td>
</tr>
<tr>
<td>F</td>
<td>299 &amp; below</td>
<td>below 60</td>
</tr>
</tbody>
</table>

## VII. STATE PROFICIENCIES, TExES COMPETENCIES, & TECHNOLOGY APPLICATIONS STANDARDS FOR ALL BEGINNING EDUCATORS

### TExES Competencies (PPR) [link]

<table>
<thead>
<tr>
<th>TExES Competencies (PPR) (link)</th>
<th>TechApp Standards (below)</th>
<th>Assignments</th>
</tr>
</thead>
</table>

### A. TExES Competencies / Pedagogical and Professional Responsibilities (PPR)

See Appendix A for the TExES Competencies addressed for the PPR exam.

### B. Technology Applications Standards for All Beginning Educators

The State Board for Educator Certification (SBEC) approved educator certification standards in Technology Applications for all beginning educators. They are based on the Technology Applications TEKS for Grades 6-8. These standards are a part of the Texas Examination of Educator Standards (TExES) test frameworks in Pedagogy and Professional Responsibilities. See Appendix A for a more detailed listing of the standards or visit [http://class.sprnet.org/target/sbec_standards.htm](http://class.sprnet.org/target/sbec_standards.htm) for the PDF file download.

### Standard I: All teachers use and promote creative thinking and innovative processes to construct knowledge, generate new ideas, and create products.

**Teacher Knowledge: What Teachers Know**

1.1k how to use innovative technology and electronic communication to create new knowledge;
1.2k how to use prior knowledge to develop new ideas, products, and processes; and
1.3k how to demonstrate creative thinking, construct new knowledge, and develop innovative products and processes that use technology.
## Application: What Teachers Can Do

1.1s design and create interdisciplinary multimedia presentations that include audio, video, text, and graphics;  

1.4s apply prior knowledge to develop new ideas, products, and processes; and  

1.5s create, present, publish, and copyright original works as a means of personal or group expression.

### Standard II: All teachers collaborate and communicate both locally and globally using digital tools and resources to reinforce and promote learning.

### Teacher Knowledge: What Teachers Know  

2.1k how to design and format digital information for appropriate and effective communication;  

2.2k how to deliver a product electronically in a variety of media;  

2.3k how to evaluate communication in terms of both process and product; and  

2.4k how to use a variety of digital tools to create and manage personal and professional learning networks for collaboration, communication, and instruction.

### Application: What Teachers Can Do  

2.2s participate in electronic communities as a learner, initiator, and contributor;  

2.3s employ technological collaboration such as sharing information through online communications to complete tasks;  

2.4s use groupware, collaborative software, and productivity tools to create products;  

2.5s use technology in self-directed activities to create products for and share products with defined audiences;  

2.6s evaluate student-created products through self- and peer review for relevance to the assignment or task prior to final submission;  

2.7s use productivity tools, such as slide shows, posters, multimedia presentations, newsletters, banners, brochures, or reports, to create effective document files for defined audiences;  

2.8s use a variety of media, formats, devices, and virtual environments to select, store, and deliver products;  

2.9s design and create interdisciplinary multimedia presentations that include audio, video, text, and graphics for defined audiences; and

### Standard III: All teachers acquire, analyze, and manage content from digital resources.

### Teacher Knowledge: What Teachers Know  

3.3k how to access and use online help.  

3.6s identify the source, location, media type, relevancy, and content validity of available information; and  

3.7s process data and communicate results.

### Standard IV: All teachers make informed decisions by applying critical-thinking and problem-solving skills.

### Application: What Teachers Can Do  

4.10s design and implement procedures to track trends, set timelines, and review/evaluate progress for continual improvement in process and product;  

4.12s determine and employ technology specifications to evaluate projects for design, content delivery, purpose, and audience and demonstrate that established criteria or rubrics can be used to evaluate the process and product.

### Standard V: All teachers practice safe, responsible, legal, and ethical behavior while using technology tools and resources.
Teacher Knowledge: What Teachers Know

5.2k how to practice and explain ethical acquisition of information and standard methods for citing sources;

Application: What Teachers Can Do

5.1s understand copyright laws, fair use guidelines, digital safety rules, creative commons, free and open source, public domain, violations, and issues including but not limited to computer hacking, computer piracy, intentional virus setting, and invasion of privacy;

5.2s model ethical acquisition and use of digital information, including using established methods to cite sources;

5.4s model respect for intellectual property when manipulating, morphing, and editing graphics, video, text, and sound;

5.6s understand and practice safe and responsible online behavior, personal security guidelines, digital etiquette, and acceptable use of technology.

VIII. POLICIES

Note:

*TIE = Technology Integrated Experience: the EC-6 student activity you will incorporate into one of your field-basing site lesson plans. For you, this also means the associated planning process and careful consideration of the documents supporting that process.

*Plan ahead; avoid procrastination. If you need to communicate with people, do so early on, rather than waiting and discovering your CT is out sick, etc. Use various forms of communication (face to face, email, texting quick messages, etc) to achieve your communication need. Ask for and adapt to their preferred style of communication and follow up with a secondary form of communication.

Mentoring / collaboration: As part of policy and your course grade, you will be expected to collaborate and peer mentor within the BlackBoard environment. Various levels of technology experience exist within each course. Providing quality feedback and assistance to peers within the BlackBoard discussion threads will be recorded and evaluated based upon quality of information posted, as well as persistence throughout the course of TIE and ePort development.

Late work: Assignments submitted within one week past the due date will be accepted for a maximum of 75% credit; one week or more past the due date for a maximum of 50% credit. Quizzes are available only on the date provided to your field-basing section.

IX. TEXTBOOK

- No textbook needed for this course.

X. REFERENCES


XI. COURSE POLICIES

Academic Integrity/Plagiarism
University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one's own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in failure.

Dropping a Class
I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with me before you decide to drop to be sure it is the best thing to do. Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. **April 11, 2014** is the last day to drop a class with an automatic grade of "W" this term.

Preferred methods of scholarly citations
Publication Manual of the American Psychological Association, Sixth Edition is the preferred method for citations within papers.

Classroom/professional behavior
All students are expected to act in a responsible manner with consideration of fellow students and toward TAMU-CC faculty and staff members. Specific rules and information is available in the TAMU-CC Student Handbook and available through the website http://www.judicialaffairs.tamucc.edu/studentcofc.html

Grade Appeals*
As stated in University Rule 13.02.99.C2, Student Grade Appeals, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process,
see University Rule 13.02.99.C2, Student Grade Appeals, and University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules Web site at http://www.tamucc.edu/provost/university_rules/index.html. For assistance and/or guidance in the grade appeal process, students may contact the Office of Student Affairs.

**Disabilities Accommodations**

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call or visit Disability Services at (361) 825-5816 in CCH 116. See website http://disabilityservices.tamucc.edu/.

If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.

**Statement of Academic Continuity**

In the event of an unforeseen adverse event and classes could not be held on the campus of Texas A&M University-Corpus Christi, this course would continue through the use of e-mail and/or Blackboard. In addition, the syllabus and class activities may be modified to allow continuation of the course. Ideally, University facilities (e.g., e-mails, Blackboard, websites) will be operational within two days of the closing of the physical campus. Students need to make certain that the course instructor has both a primary and secondary means of contacting each student.

*Required by SA*
Appendix A

**PPR for Grades K-12**

**Competency 009**
The teacher incorporates the effective use of technology to plan, organize, deliver, and evaluate instruction for all students. The beginning teacher:

A. Demonstrates knowledge of basic terms and concepts of current technology (e.g., hardware, software applications and functions, input/output devices, networks).

B. Understands issues related to the appropriate use of technology in society and follows guidelines for the legal and ethical use of technology and digital information (e.g., privacy guidelines, copyright laws, acceptable use policies).

C. Applies procedures for acquiring, analyzing, and evaluating electronic information (e.g., locating information on networks, accessing and manipulating information from secondary storage and remote devices, using online help and other documentation, evaluating electronic information for accuracy and validity).

D. Knows how to use task-appropriate tools and procedures to synthesize knowledge, create and modify solutions, and evaluate results to support the work of individuals and groups in problem-solving situations and project-based learning activities (e.g., planning, creating, and editing word processing documents, spreadsheet documents, and databases; using graphic tools; participating in electronic communities as learner, initiator, and contributor; sharing information through online communication).

E. Knows how to use productivity tools to communicate information in various formats (e.g., slide show, multimedia presentation, and newsletter) and applies procedures for publishing information in various ways (e.g., printed copy, monitor display, Internet document, video).

F. Knows how to incorporate the effective use of current technology; use technology applications in problem-solving and decision-making situations; implement activities that emphasize collaboration and teamwork; and use developmentally appropriate instructional practices, activities, and materials to integrate the Technology Applications TEKS into the curriculum.

G. Knows how to evaluate students' technologically produced products and projects using established criteria related to design, content delivery, audience, and relevance to assignment.

H. Identifies and addresses equity issues related to the use of technology.