Accommodations & Adaptations for Instructional Technology Specialists Certificate
Guidelines that inform the work of the Instructional Technology Specialists

Based on recommendations from Instructional Technology Specialists (ITS) and ITS Educators, the following table has been developed as a guideline indicating ways that ITS may meet the intent of the competencies required by Chapter 49. The left column indicates the language as written in Chapter 49. Boxed words on the left side are substituted in the right column with more job-specific language, in recognition of the role of ITS in relation to these competencies. Where there is no text showing on the right, the guideline should be interpreted as is. Examples of related ITS job tasks have been added to the right column to guide program developers and reviewers.

Regulation Language	Activities that relate to the work of the Instructional Technology Specialist (ITS)
I. Types of Disabilities and Implications for Learning Candidates will be able to:	**I. Types of Disabilities and Implications for Learning** Candidates will be able to:
A. Demonstrate an understanding of and ability to plan for: type, identification and characteristics of different types of disabilities, as well as effective, evidence-based instructional practices and adaptations.	A. Demonstrate an understanding of and ability to support instructional personnel as they plan for: type, identification and characteristics of different types of disabilities, as well as effective, evidence-based instructional practices and adaptations. **Examples:** • Participate as a member of an IEP team; • Provide examples of technologies that could support instructional personnel in collaboration and information gathering; • Provide information on the electronic resources available.
B. Demonstrate an understanding of the legal rights and responsibilities of the teacher related to special education referral and evaluation and the rights and procedural safeguards that students are guaranteed.	B. Demonstrate an awareness of the legal rights and responsibilities of the teacher related to special education referral and evaluation and the rights and procedural safeguards that students are guaranteed. **Examples:** • Know where to find updated electronic information on the legal rights and responsibilities; • Provide stakeholders with a way to obtain the information using technology.
C. Demonstrate an understanding of possible causes and implications of overrepresentation of minorities in special education to avoid misinterpretation of behaviors that represent cultural, linguistic differences as indicative of learning problems.	C. Demonstrate an awareness of possible causes and implications of overrepresentation of minorities in special education to avoid misinterpretation of behaviors that represent cultural, linguistic differences as indicative of learning problems. **Examples:**

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	• Know where to find updated electronic information on minority/cultural issues as they related to special education; • Provide stakeholders with a way to obtain the information using technology; • Provide examples of various ways the minorities and cultural groups respond to technology, e.g., some impoverished populations often feel empowered.
II. Cognitive Skill Development to Ensure Achievement of Students with Disabilities in Standards Aligned System to include All School Environments	**II. Cognitive Skill Development to Ensure Achievement of Students with Disabilities in Standards Aligned System to include All School Environments**
A. Cognitive – Delineate how individuals acquire and process information. 1. Design learning environments to facilitate encoding, storage and retrieval of knowledge and information for memory, attention, perception, action, and problem solving.	**A.** 1. **Examples**: • Provide examples of Instructional Design procedures to create the desired learning environment; • Provide examples of technologies that facilitate the specific learning goal.
2. Describe the developmental patterns of change, physical, cognitive, and psychosocial areas that have been identified for each stage of development.	2. **Examples**: • Know where to find updated electronic information on the developmental stages; • Provide examples of technologies for the appropriate developmental stage.
3. Apply concepts of human development to education and learning regarding attention, memory, conceptual knowledge and its formation, reasoning, decision making, problem-solving, executive functioning, principles and mechanisms of development, intelligence, action, and motor control.	3. Support instructional personnel's use of technology as they apply concepts of human development to education and learning regarding attention, memory, conceptual knowledge and its formation, reasoning, decision making, problem-solving, executive functioning, principles and mechanisms of development, intelligence, action, and motor control. **Example:** • Provide examples of Instructional Design, specifically the needs assessment and learner analyses, which take into account the concepts of human development.
4. Specify the experiences children need from birth to age eight to prepare them to learn, read, and succeed in school.	4. **Example:** • Provide examples of appropriate technology use (beyond just computer applications).
5. Identify early interactions with adults and peers, the early childhood education teaching methods and curricula, and comprehensive early childhood interventions that support	5. **Example:** • Provide examples of appropriate technology use for children, e.g., computer, TV, and electronic games that include diverse cultures and

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learning and development, specifically in domains that prepare children from diverse backgrounds for kindergarten and the early grades.	a multilingual understanding of reading and math.
B. Physical – Recognize patterns of typical physical developmental milestones and how patterns of students with disabilities may be different, and plan effectively for possible accommodations and/or modifications which may be necessary to implement effective instructional practices.	**B. Physical** – Be aware of instructional technologies that can assist instructional personnel in adapting instruction for patterns of typical physical developmental milestones and how patterns of students with disabilities may be different, and provide information about technologies that can assist instructional personnel in planning effectively for possible accommodations and/or modifications which may be necessary to implement effective instructional practices. **Examples:** • Know where to find updated electronic information on the physical developmental milestones; • Know where and when to get access to assistive technologies specialists; • Identify ways traditional technologies (in contrast to assistive technologies) can be adapted to accommodate learners (i.e. built in magnifiers, text to speech, on screen keyboard).
C. Social – Initiate, maintain and manage positive social relationships with a range of people in a range of contexts. 1. Recognize areas of development for students with disabilities and plan effectively for: interpersonal processes, forming and maintaining relationships (including parent-child, caregiver, peer, friend, sibling), and attachment models and their effects on learning.	**C. Social** – Initiate, maintain and manage positive social relationships with a range of people in a range of contexts. 1. Recognize areas of development for students with disabilities including awareness of: interpersonal processes, forming and maintaining relationships (including parent-child, caregiver, peer, friend, sibling), and attachment models and their effects on learning. **Examples:** • Know where to find updated electronic information on the development of students with disabilities; • Describe ways that technologies can be used to maintain and/or enhance relationships for learning (e.g., student posting work - audio, video, or text- on the web, receiving feedback from others, etc.).
2. Apply principles in social competence, social withdrawal, social role formation and maintenance, and prosocial behaviors, and aggression as they affect learning.	2. Support instructional personnel's use of technology as they apply principles in social competence, social withdrawal, social role formation and maintenance, and prosocial behaviors, and aggression as they affect learning. **Examples:** • Know where to find updated electronic information on principles of social principles;

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	• Identify ways that electronic communication can empower and negatively affect social behaviors (i.e. Social networking).
D. Behavioral – Recognize patterns of typical behavioral milestones and how patterns of students with disabilities may be different, and plan effectively for positive teaching of appropriate behaviors that facilitate learning.	**D. Behavioral** – Recognize patterns of typical behavioral milestones and how patterns of students with disabilities may be different, and support instructional personnel as they plan effectively for positive teaching of appropriate behaviors that facilitate learning. **Examples:** • Know where to find updated electronic information on behavioral milestones for students with disabilities; • Identify updated electronic information for instructional personnel to search for effective positive teaching methods; • Model and instruct appropriate behaviors for technology use, e.g., AUP and handling instructions; • Describe and apply the concept of Digital Citizenship.
E. Language – Apply reading predictors, analyzing the effect of individual differences in specific perceptual, linguistic, and cognitive skills and how they affect a child's ability to read. 1. Apply principles of early learning to language development in the following areas: language comprehension, language expression, language form and syntax, morphology and semantics.	**E. Language** – Support instructional personnel's use of technology as they apply reading predictors, analyzing the effect of individual differences in specific perceptual, linguistic, and cognitive skills and how they affect a child's ability to read with regard to software and/or specialized equipment recommendations. 1. Assist in the application of principles of early learning to language development in the following areas: language comprehension, language expression, language form and syntax, morphology and semantics as it relates to technology. **Example:** • Know how to access assistive technology specialists.
2. Apply and teach skills of spoken language as a precursor of reading and academic development.	**2.** Provide professional development to instructional personnel/administrators and have an understanding that technology exists to apply and teach skills of spoken language as a precursor of reading and academic development. **Example:** • Identify traditional technologies that could aid in the application of early language development, e.g., text to speech, podcasting, student recording, talking books, and using multimedia available in schools.
F. Positive Environments for Learning for Students with Disabilities 1. Define the scientific principles influencing academic and social behavior.	**F. Positive Environments for Learning for Students with Disabilities** 1. Define the research-based principles influencing academic and social behavior and any relationship to the use of technology for instruction. **Examples:**

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	• Identify electronic access to information for instructional personnel to research evidence-based principles that influence academic and social behavior; • Provide examples of needs assessment and learner analysis that take into account the research based principles that influence academic and social behavior.
2. Implement positive behavioral interventions based on a functional analysis of behavior.	2. Support instructional personnel as they implement positive behavioral interventions based on a functional analysis of behavior. **Example:** • Work with special education personnel to identify technology tools that might support functional behavior analysis
3. Create an optimal learning environment by utilizing, evaluating, modifying and adapting the classroom setting, curricula, teaching strategies, materials, and equipment.	3. Through the use of technology, support instructional personnel as they create an optimal learning environment by utilizing, evaluating, modifying and adapting the technology appropriate to classroom setting, curricula, teaching strategies, materials, and equipment. **Examples:** • Identify preferred physical placement of technology in classroom; • Provide examples of ways technology could be used to enhance curriculum for particular content areas; • Provide teaching strategies with technology to meet varied learning goals; • Identify technologies that could be used to meet a particular learning goal; • Evaluate the use of technology according to the learning goal.
G. Collaboration and Communication 1. Identify effective co-planning and co-teaching strategies.	**G. Collaboration and Communication** 1. **Examples:** • Provide teaching strategies with technology to meet varied learning goals; • Identify technology tools that can be used for collaboration (email, Google Docs, shared drive/network).
2. Identify collaborative consultative skills and models (i.e., understanding role on the IEP team; teaming; parallel teaching).	2. **Examples:** • Understand the role of the Instructional Technology Specialist (ITS) within the collaborative team; • Assess possible technologies and write critiques that are "accessible" to non-technology personnel.
3. Identify instructional levels of students through collaboration	3. Assist instructional personnel with technologies available to help them

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with members of the IEP team.	identify instructional levels of students through collaboration with members of the IEP team. **Examples:** • Identify websites that provide information about differentiated text resources; • Support instructional personnel as they need to collaborate with others and their use of technology.
4. Understand the role of the general educator as part of the team for transition planning across transition points (i.e., preschool to school entry, grade level to grade level, school to school, to post school outcomes).	4. **Example:** • Help identify the way technologies could be used for planning across transition points, i.e., tracking, using database or software.
5. Demonstrate an understanding of the meaningful roles that parents and students play in the development of the student's education program.	5. **Example:** • Help identify the way technologies could be used for developing communication, e.g., a website, grade tracking, or email communication.
6. Demonstrate sensitivity for multicultural and economic perspectives in order to encourage parent participation.	6. **Examples:** • Understand the "digital divide", and its potential and researched impact on learning; • In technology-rich environments, evaluate the images, language and multimedia for support of diversity, and make appropriate suggestions.
7. Demonstrate an understanding of how to support student and family communication and meaningful participation into the student's educational program.	7. Demonstrate an understanding of how technology may be used to support student and family communication and meaningful participation into the student's educational program. **Examples:** • Provide technologies so students' homework is accessible from home computers; • Identify ways to write electronic communications that encourage positive participation.
8. Work collaboratively with all members of the student's instructional team including parents and non-educational agency personnel.	8. Work collaboratively with all members of the student's instructional team including parents. **Example:** • Respond to instructional team members' requests for assistive technology support and appropriate electronic resources.
III. Assessments	**III**. Assessments
Candidates will be able to:	Candidates will be able to identify technology/technology-based resources

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A. Identify, administer, interpret, and plan instruction based on each of the following assessment components in a standards aligned system.	that can assist educators to: **A.** Plan instruction based on each of the following assessment components in a standards aligned system.
1. **Authentic** –A form of assessment in which, students are asked to perform real-world tasks that demonstrate meaningful application of essential knowledge and skills. The assessment usually includes a task for students to perform, and a rubric is used to evaluate their performance.	**1. Authentic –** **Examples:** • Demonstrate a way that technologies could be use for developing authentic tasks such as multimedia creation and a rubric that assesses the content and process, weighing criteria as per the goals; • Show ways to create a webquest with an aligning assessment.
2. **Screening**- Screening assessments are used to determine which students may be at risk. Poor performance on the screening assessment identifies those students needing additional, in-depth assessment of strengths and weaknesses. The primary purpose of screening assessments is to identify children early who need additional instructional (or behavioral) intervention. An essential element of using a screening assessment is implementing additional identified intervention(s) (instructional, behavioral, or medical).	**2. Screening-** **Examples:** • Help identify the way technologies could be use for tracking through the screening process, i.e., a database; • Know how to find electronic resources that may aid in the screen process.
3. **Diagnostic** – The purpose is to ascertain, prior to instruction, teach student's strengths, weaknesses, knowledge, and skills. Using diagnostic assessments enable the instructor to remediate students and adjust the curriculum to meet each pupil's unique needs. (Examples of diagnostic assessments are: DRA's; Running Records; GRADE; GMADE)	**3. Diagnostic –** **Examples:** • Help identify a way technologies could be use for diagnostic purposes; i.e., a database or a specific software product; • Find electronic resources that may aid in the diagnostic process.
4. **Formative**- Pennsylvania defines formative assessments as classroom based assessments that allow teachers to monitor and adjust their instructional practice in order to meet the individual needs of their students. Formative assessments can consist of formal instruments or informal observations. The key is how the results are used. Results should be used to shape teaching and learning. Black and Wiliam (1998) define formative assessments broadly to include instructional formats that teachers utilize in order to get information that are used diagnostically to alter instructional practices and have a direct impact on student learning and achievement. Under this definition, formative assessment encompasses questioning strategies, active engagement check-ins (such as response	**4. Formative-** **Examples**: • Demonstrate ways to use digital student response systems, i.e., clickers, CPS units, for formative assessment; • Show ways to use on-line games and quizzes for getting data on student performance, i.e., Study Island, free on-line sites; • Create a Digital Presentation (PPT) that uses assessment questions throughout formative assessment; • Know the limits of the digital assessment tools for ascertaining student understanding of a concept.

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cards, white boards, random selection, think-pair-share, popsicle sticks for open-ended questions, and numbered heads), and analysis of student work based on set rubrics and standards including homework and tests. Assessments are formative when the information is used to adapt instructional practices to meet individual student needs as well as to provide individual students corrective feedback that allows them to "reach" set goals and targets. Ongoing formative assessment is an integral part of effective instructional routines that provide teachers with the information they need to differentiate and make adjustments to instructional practice in order to meet the needs of individual students. When teachers know how students are progressing and where they are having trouble, they can use this information to make necessary instructional adjustments, such as re-teaching, trying alternative instructional approaches, or offering more opportunities for practice. The use of ongoing formative classroom assessment data is an imperative. Effective teachers seamlessly integrate formative assessment strategies into their daily instructional routines.	
5. Benchmark – Assessments that are designed to provide feedback to both the teacher and the student about how the student is progressing towards demonstrating proficiency on grade level standards. Well-designed benchmark assessments and standards-based assessments: measure the degree to which students have mastered a given concept; measure concepts, skills, and/or applications; are reported by referencing the standards, not other students' performance; serve as a test to which teachers want to teach; measure performance regularly, not only at a single moment in time. (Examples of benchmark assessments are: 4Sight, Riverside 9-12, DIBELS)	5. **Benchmark –** **Examples**: • Demonstrate ways to digitally track a student's progress through the benchmark assessments, i.e. a database; • Show ways to do on-line research for valid benchmark assessments.
6. **Summative** –Summative Assessments seek to make an overall judgment of progress at the end of a defined period of instruction. Often the summative assessment occurs at the end of a school level, grade, or course, or is administered at certain grades for purposes of state or local accountability. Summative assessments are considered high-stakes assessments and the results are often used in conjunction with the No Child Left	6. **Summative –** **Examples:** • Demonstrate ways to digitally track students' summative assessment data, i.e., a database; • Show ways to retrieve the data for summative assessments that are shared with the public.

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Behind Act (NCLB) and Adequate Yearly Progress (AYP). They are designed to produce clear data on the student's accomplishments at key points in his or her academic career. Performance on these assessments are often part of the student's permanent record and serve as an indication of overall performance on a set of standards. Results from summative assessments are of interest to parents, faculty, administration, the press, and the public. The data from summative assessments are the basis of accountability systems. (Examples of summative assessment: PSSA; Terra Nova)	
B. Demonstrate an understanding of the types of assessments used (e.g., screening, diagnostic, formative, summative) and the purpose of each assessment in a data-based decision making process.	**B.** Demonstrate an understanding of the fact that technology can support types of assessments (e.g., screening, diagnostic, formative, summative) used and the purpose of each assessment in a data-based decision making process. **Examples:** • Know proper ways to read the data tables; • Know the ways to retrieve the data from electronic data sources; • Describe ways to format the data electronically.
C. Demonstrate the use of formal and informal assessment data for instructional, behavioral, and possible eligibility for special education based on the type of assessment, level of the students being assessed, and the purpose of and the quality of instruction.	**C.** Demonstrate the use of technology to support instructional personnel's use of formal and informal assessment data for instructional, behavioral, and possible eligibility for special education based on the type of assessment, level of the students being assessed, and the purpose of and the quality of instruction. **Examples:** • Show ways to store data for various purposes; • Know ways to retrieve the data from electronic data sources; • Describe ways to format data electronically; • Share technology tools that could be used for different types of assessments; • Share on-line resources for more information about each topic.
D. Demonstrate an understanding of the multi-disciplinary evaluation process and an ability to articulate the findings presented in an evaluation report including grade-level equivalents, percentile rank, standard scores, and stanines.	**D. Examples:** • Show ways to read the tables used in the evaluation report; • Supply ways to synthesize the electronic data into an evaluation report.

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E. Demonstrate an understanding of the components of the Individualized Education Plan (IEP) process, with emphasis on understanding measurable goals based on present levels, specially designed instruction, adaptations, accommodations, supplementary aids and services, and supports for school personnel.	**E. Examples:** • Show how to use electronic resources to write the components of the IEP; • Within the Instructional Design process, identify the elements that are related to IEP writing.
F. Articulate differences between achievement tests, aptitude tests, and observational data used in special education placement decisions.	**F. Examples:** • Know the differences among tests and data sources and identify ways in which technology may be used to collect and share such data.
G. Create an instructional plan using assessment information related to individual student	**G.** Support instructional personnel's use of technology as they create an instructional plan using assessment information related to individual student achievement. **Example:** • Work with instructional personnel to help them mine assessment data and derive data that is well suited to making instructional decisions.
H. Analyze and interpret formative assessment (e.g., curriculum based assessment, CBA).	**H.** Work with instructional personnel as they analyze and interpret formative assessment (e.g., curriculum based assessment, CBA). **Examples:** • Respond to instructional personnel requests for technology tools to support their analysis of formative assessment. • Identify online resources to help instructional personnel interpret formative data. • Help instructional personnel recognize that data-visualization tools (like charts and graphs) may prove helpful in interpreting data.
I. Demonstrate an understanding of the purpose and intent of standardized assessments and progress monitoring as one of the multiple indicators used in overall student evaluation.	**I. Examples:** • Identify online resources that help clarify the purpose and intent of standardized assessments and progress monitoring hat may be used by instructional personnel.
J. Systematically monitor student performance to identify areas of need.	**J. Examples:** • Show ways to monitor student performance electronically; • Share various ways that different technology may assist in the process.
K. Use evaluative data on an individual, class and district level	**K.** Support instructional personnel's use of technology as they use

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to identify and implement instructional and/or programmatic revisions for quality improvement.	evaluative data on an individual, class and district level to identify and implement instructional and/or programmatic revisions for quality improvement. **Examples:** • Show how to read the electronic data available for the individual, class and district level; • Identify software or programs that could assist with evaluating data.
L. Demonstrate an understanding of legally acceptable modifications and accommodations for assessment for students with disabilities.	**L.** Demonstrate an understanding of the need for instructional personnel to employ legally acceptable modifications and accommodations for assessment for students with disabilities. **Examples:** • Identify how technology may be used to make legally acceptable modifications and accommodations in assessment or such students. • Identify online resources that instructional personnel may use to learn more about legally acceptable assessment modifications and accommodations.
M. Demonstrate an understanding of ethical practice for assessment.	**M. Examples:** • Through the Instructional Design process, focus on validity of assessments and the ethical and moral obligation; • Consider the cultural implications of completing computer based assessments; • Consider the learning styles implications of completing computer based assessments.
N. Recognized the need to consult with multi-disciplinary team when cultural, economic or linguistic differences are present in order to avoid biased assessment.	**N. Example:** • Identify online resources that instructional personnel may use to learn more about avoiding biased assessment.
IV. Literacy Development and Instruction in Core and Intervention Areas	**IV. Literacy Development and Instruction in Core and Intervention Areas** Candidates will be able to identify technology and technology-based resources that can support instructional personnel as they: [This part is a **global** header for section IV.]
Candidates will be able to: **A.** Demonstrate an ability to match instructional research-validated literacy interventions to identified student needs.	**A.** Match instructional research-validated literacy interventions to identified student needs. **Example:**

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	• Identify software or technology tools for the instructional personnel.
B. Demonstrate a conceptual understanding of the components of reading and describe how these areas pose challenges for students with disabilities: 　　Phonological Awareness & Phonics 　　Fluency 　　Vocabulary 　　Comprehension 　　Language 　　Word Study (investigate & understand patterns in words)	**B. Example:** • Identify possible software, on-line games, or other technology tools from which instructional personnel may choose.
C. Demonstrate an ability to review and evaluate literacy programs for purpose, quality, effectiveness, and research-base and show knowledge of commonly available programs.	**C. Examples:** • Evaluate, with instructional personnel, the effectiveness of the technology resources of the literacy programs; • Supply information on effective uses of technology for literacy programs.
D. Identify evidence-based instructional practices to be used with students with disabilities in the area of literacy.	**D. Example:** • Identify useful practices, e.g., enlarging the font, using screen readers, using a tracking device for reading.
E. Demonstrate an understanding of the evidence-based connection between literacy and behavior.	**E. Example:** • Identify how technology may be used in the classroom to enhance students' literacy in ways that help to enhance their engagement with the content under study and foster greater classroom participation.
F. Demonstrate a conceptual understanding of the components of writing and describe how these areas pose challenges for students with disabilities: 　　Text production 　　Spelling 　　Composition for different types of writing	**F. Example:** • Provide instructional personnel with online activities that help simulate the experience of students with learning disabilities.
G. Clearly articulate and model the use of explicit and systematic instruction in the teaching of literacy (reading and writing) for students with disabilities across all reading levels.	**G. Examples:** • Share instructional design models for curriculum creation; • Show technology tools that help address systematic creation of lessons (e.g., Nettrekker evaluates websites on reading levels)
H. Clearly articulate and model the use of explicit and systematic instruction in the teaching of content area literacy for	**H. Example:** • Show technology tools that help address systematic creation of

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all students with disabilities across all reading levels. **I.** Demonstrate instructional strategies to enhance comprehension of material. **J.** Demonstrate an understanding of the challenges that students with specific disabilities face in content area literacy. **K.** Assess the readability of content area reading materials.	lessons (e.g., Nettrekker evaluates websites on reading levels) **I.** **Example:** • Show technology tools that help address reading challenges (e.g., Nettrekker has read-aloud feature, Web Anywhere reads web pages, PDF can all be read aloud, using a concept mapping tool allows students to easily create pictures of content and show relationships.) **J.** **Examples:** • Identify technology-based simulations that help instructional personnel to experience the reading challenges. • Identify online resources that can help instructional personnel understand content area literacy challenges students with disabilities face. **K.** **Examples:** • Demonstrate for instructional personnel how word processing software may be used to assess the readability of a document. • Show instructional personnel Nettrekker and how the search engine evaluates the reading ability needed for a website; • Identify software that addresses the same content on multiple reading levels.
L. Demonstrate the ability to adapt content area material to the student's instructional level.	**L.** **Examples:** • Demonstrate for instructional personnel how to use technology to adapt materials by creating a PDF and having material read aloud to students. • Demonstrate for instructional personnel how to record a student's explanation with images in presentation software.
M. Utilize assessment tools with appropriate accommodations in the area of literacy to identify effectiveness of the standards based curriculum (core literacy program for students with disabilities).	**M.** **Examples:** • Describe how technology may be used to accommodate literacy needs of learners (for example, by reading printed text for learners or providing linked clarifications or scaffolds to support learners' literacy needs) • Identify online resources that instructional personnel may use to enhance their understanding of appropriate assessment accommodations and standards-based curricular assessment.

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N. Establish and maintain progress monitoring practices aligned with the identified needs of each student to adjust instruction and provide rigor in the area of literacy for students with disabilities.	**N. Examples:** • Describe how an instructional technology specialist should design professional development for instructional personnel to help them see how technology can be employed to collect student performance data and to monitor student progress. • Identify technology tools that instructional personnel can use to monitor student progress. • Identify appropriate online resources that address student progress monitoring and best practices in literacy instruction for students with disabilities.
O. Establish and maintain progress monitoring practices within the content area aligned with the identified needs of each student to adjust instruction and provide rigor in the area of literacy for all students with disabilities.	**O. Examples:** • Describe how an instructional technology specialist should design professional development for instructional personnel to help them see how technology tools can be used to support instructional decisions about curricular modifications in literacy for students with disabilities. • Identify online resources that address how progress monitoring data may be used to adapt literacy instruction for students with disabilities.
V. Effective Instructional Strategies for Students with Disabilities in Inclusive Settings	**V. Effective Instructional Strategies for Students with Disabilities in Inclusive Settings** Candidates will be able to identify technology and technology-based resources that can support instructional personnel as they: [This part is a **global** header for section V.]
Candidates will be able to: **A.** Identify effective instructional strategies to address areas of need.	**A. Examples:** • Describe how technology may be used to enhance the effectiveness of instruction for students with special needs. • Identify online resources that support instructional personnel's understanding of how to select appropriate instructional strategies for students with disabilities.
B. Scaffold instruction to maximize instructional access to all students.	**B. Examples:** • Identify technology tools that can be used to scaffold instruction. • Identify online resources that address techniques for scaffolding instruction to enhance its effectiveness for students with disabilities.

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C. Monitor student progress to provide mediated scaffolding and increase academic rigor when appropriate.	**C**. **Examples:** • Identify online resources that support instructional personnel's understanding of how the relationship among student progress monitoring, instructional scaffolding and academic rigor.
D. Provide feedback to students at all levels to increase awareness in areas of strength, as well as areas of concern.	**D. Examples:** • Describe how an instructional technology specialist should design professional development for instructional personnel so they can use technology to enhance the quality and effectiveness of feedback they provide to students (for example, various highlighting techniques to direct student attention, inserted comments and notes in word processing documents, inserted audio clips in word processed documents, and embedding links to online resources that can help students in documents). • Identify online resources that support instructional personnel's understanding of best practices in the use of feedback to enhance instruction for all learners.
E. Strategically align standard based curriculum with effective instructional practices.	**E. Examples:** • Identify online resources that support instructional personnel's understanding of best practices in matching instructional techniques to standards-based curriculum.
F. Identify and implement instructional adaptations based on evidence-based practices (demonstrated to be effective with students with disabilities) to provide curriculum content using a variety of methods without compromising curriculum intent.	**F. Examples:** • Describe how instructional technology specialists should design professional development to help instructional personnel identify how technology may be used to create instructional adaptations that are matched to evidence-based practices. • Identify online resources that support instructional personnel's understanding of how to select appropriate instructional methods of adapting instruction without compromising curricular intent.
G. Analyze performance of all learners and make appropriate modifications.	**G**. **Examples:** • Describe ways instructional personnel can use technology to analyze learner performance and use the resultant findings to modify instruction appropriately.

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	• Identify online resources that support instructional personnel's understanding of how analysis of performance data may be used to make appropriate instructional modifications.
H. Design and implement programs that reflect knowledge, awareness and responsiveness to diverse needs of students with disabilities.	**H. Example:** • Identify online resources that support instructional personnel's understanding of the diverse needs of students with disabilities.
I. Use research supported methods for academic and non-academic instruction for students with disabilities.	**I. Examples:** • Identify research-supported methods for using technology to support instructional for students with disabilities. • Identify online resources that support instructional personnel's understanding of appropriate research-based methods.
J. Develop and implement universally designed instruction.	**J. Examples:** • Describe what universal design in technology-supported instruction is and its consequences for use of technology in instruction, particularly with students with disabilities. • Identify online resources that instructional personnel may use to gain a better understanding of universal design for instruction.
K. Demonstrate an understanding of the range and the appropriate use of assistive technology (i.e., no tech, low tech, high tech).	**K. Examples:** • Describe how assistive technology may be used to support instruction for students with disabilities. • Describe how an instructional technology specialist can work with instructional personnel to help them identify the appropriate level of technology for use with a student with disabilities (no tech, low tech, high tech).
L. Demonstrate efficient differentiated instruction and an understanding of efficient planning, coordination and delivery for effective instruction required for inclusive settings.	**L. Examples:** • Identify technology tools that can help instructional personnel differentiate instruction and track the various instructional approaches used with students in an inclusive setting. • Identify online resources that support instructional personnel's understanding of how to differentiate instruction and manage differentiation efficiently.

MEETING THE INSTRUCTIONAL NEEDS OF ENGLISH LANGUAGE LEARNERS (ELL)	MEETING THE INSTRUCTIONAL NEEDS OF ENGLISH LANGUAGE LEARNERS (ELL)
I. Foundations for Preservice Candidates	**I. Foundations for Preservice Candidates** Candidates will be able to identify technology and technology-based resources that can support educators to: [global header applies to all Section I competencies.]
A. Language 1. Demonstrate knowledge of language systems, structures, functions, and variation. 2. Identify the process of acquiring multiple languages and literacy skills, including the general stages of language development. 3. Identify the differences between academic language and social language.	**A. Language** **Examples:** Identify online resources that can enhance instructional personnel's understanding of: 1. Language systems, structures, functions, and variation. 2. The process of acquiring multiple languages and literacy skills, including the general stages of language development. 3. The difference between academic language and social language.
B. Culture 1. Identify sociocultural characteristics of ELLs including educational background and demographics. 2. Describe how ELLs' cultural communication styles and learning styles affect the learning process. 3. Describe how ELLs' cultural values affect their academic achievement and language development. 4. Identify bias in instruction, materials and assessments.	**B. Culture** **Examples:** Identify online resources that can enhance instructional personnel's understanding of • The role of culture in classroom behavior, academic performance, and progress of ELLs. • How culture affects the communication and learning styles of ELLs. • How cultural values influence ELLs' academic achievement and language development. • How instruction, materials and assessments may reflect cultural bias and how to identify when this is the case.
5. Demonstrate cross-cultural competence in interactions with interactions with colleagues, administrators, school and community specialists, students and their families.	5. **Example:** • Identify potential cultural issues in using technology (particularly email and Websites) for communication and identify best practices in cross-cultural communication.
6. Observe culturally and/or linguistically diverse instructional settings.	6. **Examples:** • Identify online resources that can permit instructional personnel to observe culturally and/or linguistic instructional settings (for example, video libraries, Webcams, and the like). • Use such online resources to make actual observations of such settings.

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II. Applications for Pre-service Candidates	**II. Applications for Pre-service Candidates** Candidates will be able to identify technology and technology-based resources that can support educators to: [global header applies to all Section II competencies.]
A. Standards-based Instruction 1. Apply research, concepts and theories of language acquisition to instruction.	**A. Standards-based Instruction** 1. **Examples:** • Identify research on how technology may best be used in instruction that reflects the theories, concepts, and research findings about language acquisition. • Identify online resources that can help instructional personnel enhance their understanding of how to apply language acquisition theories, concepts and research to instruction.
2. Implement appropriate research-based instructional strategies to make content comprehensible for all ELLs.	2. **Examples:** • Describe how technology may be used to make content comprehensible for ELLs. • Identify online resources that can help instructional personnel enhance their understanding of research-based instructional strategies to make content comprehensible for all ELLS.
3. Demonstrate effective instructional planning and assessment integrating the PA Language Proficiency Standards for English Language Learners PreK-12 (ELPS) and PA academic standards.	3. **Examples:** • Identify resources for instructional personnel to support their effective instructional planning and assessment integrating the PA Language Proficiency Standards for English Language Learners PreK-12 (ELPS) and PA academic standards. • Investigate reviews of type of sites, tools, software, and technology.
B. Assessment specific to ELL 1. Use PA ELPS to design content assessment.	**B. Assessment specific to ELL** 1. **Example:** • Describe how technology may be used to design instruction that reflects the PA ELPS standards.
2. Identify issues related to standards-based formative and summative assessment for *all* ELLs.	2. **Example:** • Identify online resources that can help instructional personnel enhance their understanding of the issues related to standards-based formative and summative assessment of all ELLs.
3. Use assessment data to differentiate and modify instruction for optimal student learning.	3. **Examples:** • Describe how an instructional technology specialist can assist instructional personnel with electronic gradebooks and other data-

MEETING THE INSTRUCTIONAL NEEDS OF ENGLISH LANGUAGE LEARNERS (ELL)	MEETING THE INSTRUCTIONAL NEEDS OF ENGLISH LANGUAGE LEARNERS (ELL)
	collection tools. • Describe how instructional technology specialists can design professional development for instructional personnel that helps them understand how to mine data and make decisions based on data. • Know how to work with a measurement specialist who would do such training.
C. Professionalism 1. Describe the legal responsibilities related to serving ELLs.	**C. Professionalism** 1. **Example:** • Identify online resources that can help instructional personnel enhance their understanding of the legal responsibilities related to serving ELLs.
2. Demonstrate collaborative, co-teaching models for serving ELLs.	2. **Example:** • Identify online resources that can help instructional personnel enhance their understanding of models of collaborative, co-teaching of ELLs.
3. Define common terms associated with English Language Learners.	3. **Example:** • Identify online resources that can help all personnel access and understand terms associated with ELLs.
4. Identify professional resources and organizations related to serving ELLs.	4. **Example:** • Identify online resources to help instructional personnel investigate terminology, standards, professional resources and professional organizations related to serving ELLs.