UNIVERSAL DESIGN FOR LEARNING

Evidence-Based and Promising Practices to Support Students with Disabilities

NORTH DAKOTA DEPARTMENT OF PUBLIC INSTRUCTION

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Characteristics of Effective Instruction-Universal Design for Learning

Effective instruction is guided by the principles of Universal Design for Learning (UDL); a set of principles anchored in the belief that all students can learn. UDL is planning framework that reduces instructional and environmental barriers to create learning opportunities for a wide range of students. Designing lessons according to the three principles of UDL ensures that the diverse learning needs within a class will be met. UDL designed lessons provide multiple means of engagement, representation, action and expression. These lessons provide choice which allow students to customize their learning. UDL designed lessons do not depend on technology availability; they consider technology one tool of many that students may choose to use.

Engagement – Develops purposeful, motivated learners. Engagement must be sufficient to sustain motivation to complete the learning tasks.

Engagement Indicators

Indicator 1.1 **Provide options for self-regulation**

Research findings indicate that students learn self-regulation skills through collaborative work. The learning tasks promote developing the students' social interaction skills, their ability to generate private talk, recognize shared behaviors and use external supports to engage in appropriate behaviors. Students should learn to be flexible when setting goals and evaluating their progress toward goals- learn it is permissible to modify/ adjust during the learning process

1.1. a **Promoting expectations and beliefs**

Specific, direct instruction on expectations, routines and academic learning must be provided.

Familiar evidence based practices: Self- monitoring sheets (checklist, role behaviors checklist), personal conversations, , size of group, accountability for learning – ticket out, prompting, modeling of desired behaviors- active listening, think aloud, Cooperative learning practices,

Tools: posters with school /class developed behavioral expectations listed, rubrics

Programs: Positive Behavior Interventions and Supports, Anita Archer's I do –We do- You do,

1.1. b Facilitate **personal coping skills and strategies**

Coping skills and strategies develop through modeling and specific, timely feedback to student during instruction, guided and independent practice.

Familiar evidence based practices: modeling appropriate interpersonal relationships and interactions, how to provide/ accept feedback; develop learning communities; building school connectedness, teaching social skills, homework passes, preferred activities and jobs (Nelson, 2014)

Tools: Behavior Rating Scale (BRS; cf. Kohler & Strain, 1992), Consequence Maps (Tobin & Simpson, 2012)

Programs: Social Thinking - Marcia Garcia Winner; Social Stories- Carol Gray, Collaborative Problem Solving- Ross Greene, PBIS, Prevent-Teach-Reinforce, Pivotal Response training, Intensive Behavior Intervention (Wheby and Kern, 2015), Incredible Years, Administrative Intervention (Wells, 2005), Good Behavior Game (Joslyn, 2015)

1.1. c **Develop self-assessment and reflection**

The processes of self-assessment and reflection must be taught.

Familiar evidence based practices: ticket out, self- questionnaire and charting of behavior, verbal prompts, whole class conversation/discussion, procedural prompts (i.e.- name on paper, date, class period; did you review your work for: content, mechanics, audience, follow assignment requirements?)

Tools: Behavior Rating Scale, Self & Match data collection tool

Programs: Self and Match (Salter & Croce, 2014), Collaborative Problem Solving (Greene, 2009) Managing Acting Out Behavior (Colvin, 2004, 2009)

Indicator 1.2 **Provide options for sustaining effort and persistence**

Students must connect with the goal, learn to work with peers, maintain focus on the task, and receive direct and supportive feedback. Student must learn to develop persistence and means of sustaining their efforts to truly own their learning.

1.2. a **Heighten salience of goals and objectives**

Students should know and understand the goal of the lesson and its relevance to them.

Familiar evidence based practices: establishing and practicing school-wide and classroom routines, providing scaffolds/supports for students to learn and then generalize those routines, class agendas- with daily learning goal and homework posted in the same place, class routine-homework/previous day's lesson review- link to today's lesson- instruction- ask for expansion or relevance to life, guided practice independent practice; classroom discussions to highlight relevance of goal to students, pre-teaching/teaching academic vocabulary,

Tools: Ed Ellis graphic organizer, K-W-L charts,

Programs: Kansas Intervention Strategies, PBIS, Building Academic Vocabulary (Marzano) or Words, Words Words or other strategies from Janet Allen,

1.2. b **Vary Demands and Resource to Optimize Challenges**-

Differentiated instruction provides a structure for accommodating learning profiles. Direct instruction in the use of scaffolds and supports; scaffolds are steps provided to

help student learn a task or skill. Instruction should emphasize the recognition of patterns and contexts in which skills can be applied.

Familiar evidence based practices: Mnemonics, varying levels of text and formats of text, reminders, , comprehension strategies, software, study strategies, editing strategies, place holding /line tracking assistance, paired reading, , problem based-learning, differentiated questioning, chunking of information,

Tools: Math models, graphic organizers, digital resources, guided reading/viewing guides, study guides, accessibility features of computers, digital media, books, devices

Programs: Kansas Strategies, Managed Choices- list of options based on interest and background knowledge (Allington2002), Weekly Reader- site of annotated links to different types of texts (Burke,2008)

1.2. c **Foster collaboration and community**

Research indicates the importance of interpersonal relationships and learning. Students need to be effective communicators. Cooperative learning teaches four essential skills: positive interdependence, individual accountability, face to face positive interaction, group processing (UMN Collaborative Learning Center website)

Familiar evidence based practices: cooperative learning, project based learning,
Tools: self-assessment rubric,
Programs: Peer Assisted Instruction, Anchored Instruction (Bottage, et.al, 2014)

1.2. d **Increase mastery-oriented feedback**

Mastery-oriented feedback provides students with specific guidance on making changes to their work that will lead to mastering skills or learning content.

Familiar evidence based practices: direct teaching, Questioning hierarchies/strategies

Tools: student charting of goals,

Programs: rubric comments, CBM assessments, DLM Learning Maps,

Indicator 1.3 **Provide options for recruiting interest**

Recruiting interest involves more than entertaining the student.

1.3. a **Optimize individual choice and autonomy**-

Providing students with structured choices in academics and behavior helps develop the students' understanding the effects of their choices. Research indicates environments designed to promote self-determination help students learn to manage and apply their autonomy. Clear learning goals guide the development of learning activities.

Familiar evidence based practices: activities are interesting, relevant and enriched to address student needs, preferences and challenges; choice of format, work location (library, classroom, desk, carrel) and working arrangement (group size, pairs, individual),

reading choice, project/assessment options (drawing- graphic organizers, idea maps, life graph, time lines, story graphs), Literature Circle/Book talk on student chosen text, Universal Design planning framework,
Tools: Tic-Tac-Toe (Eddyburn, 2009, 2011)
Programs: Managed Choices (Allington, 2012), Miller or Beers strategies for struggling readers,

1.3. b **Optimize relevance, value and authenticity**

Lesson topics explicitly relate to familiar contexts and experiences of students.

Familiar evidence based practices: Know/Need to Know Chart, Anticipation guides/activity (warm ups) to activate background knowledge, project based learning

Tools: charts, graphic organizers, interest inventories,

Programs: Anchored Instruction (Bottage, et. al., 2014), Text-Based Discussions (Kucan & Palincsar, 2013), Comprehension Strategies, (Tovani) (Wessling , 2011); DLM instructional videos, Math Innovations website https://www.mathematicsvisionproject.org/,

1.3. c **Minimize threats and distractions**

Creating learning tasks and environments in which the student perceives he/she can participate meaningfully, and has sufficient knowledge to complete the task successfully. In academically safe environments students have many opportunities to connect with content and instruction which encourages them to stretch themselves academically. Academically safe environments have defined behavioral expectations, provide instruction and practice in classroom and school routines, as well as reward students for following those expectations.

Familiar evidence based practices: flexible seating and groupings, cooperative learning groups, multi-sensory presentations, guided and independent practice of new skills/routines, use of planner, posted agendas for day/ week/month, establishing daily routines, menu of activities and assessments, carrels or set aside workspace, UDL designed lessons,

Tools: visual prompts (posted behavioral expectations, things to do when finished)

Programs: Positive Behavior Interventions and Supports, Good Behavior Game, Self and Match

Representation

The recognition network assists students in identifying sensory patterns within the world around us. Designing lessons that provide students with multiple

representations of content related materials assists them in becoming resourceful, knowledgeable learners. The presentation of information influences whether or not students learn it. It is the principle most closely related to the act of teaching.

Indicators for Representation

Indicator 2.1 **Provide options for comprehension**

Different representations of information helps students' access text-based information (ideas, concepts, themes) and build comprehension skills. Using different media helps students see patterns and make sense of complex concepts. These media can demonstrate the influence languages have on each other as well as elicit or provide background knowledge. Other benefits of multiple means of representation include the ability to highlight the interconnectedness of different content areas, and an understanding of a topic's major concepts and/or vocabulary. The goal of the learning process should be ensuring that students use and apply their knowledge across contexts.

2.1. a **Activate or supply background knowledge**

Make connections between new knowledge and old and across disciplines, analyze learning context to determine the range of possible interactions between student and the learning environment.

Familiar evidence based practices: multidisciplinary units, problem based learning, embedded dictionaries or glossaries or hyperlinks to background information or vocabulary, pre-teaching vocabulary or demonstrations, Cornell notes, questioning, modeling or Think Aloud

Tools: KWL chart, digital media, embedded movie/short clip in text, Anticipation guides

Programs: Building Background Knowledge (Marzano, 2004), Number Sense (Witzel, Riccomini, Herlong, 2012),

2.1. b **Highlight patterns, critical features, big ideas, and relationships**

Ability to learn and manipulate knowledge is affected by connecting new and old information to generate new ideas. Create and show structures. Text in multiple formats emphasize meaning and provide opportunities for students to build more in-depth understanding of topics, important for students to see connectedness of information. Visuals help students understand structural relationships and how information is connected. Moving background knowledge to use is key to developing resourcefulness

Familiar evidence based practices: graphic organizers, concept maps, outlining, visual prompts, , examples/non-examples, finished products, video modeling, Social stories, highlighting, math models/examples, color coding, chunking, cueing, templates for writing/ solving math, word problems, explicit instruction on using text features to determine importance of information, voice pitch, digital cues- animation, zoom, diagrams

Tools: software programs like Draftbuilder or Read, Write, Gold, computer assisted instruction, diagrams, maps, video/digital materials

Programs: Kansas Instructional Strategies, Text-Based Discussions (Kucan & Palincsar, 2013), Comprehension Strategies, (Tovani) (Wessling, 2011); DLM instructional videos, Collaborative Reading Strategies (Klingner and Vaughn 2011, Reutebuch, 2014)

2.1. c Guide information processing, vocalization, and manipulation

Organizing information- summarizing, prioritizing, categorizing, identifying context,

Familiar evidence based practices: explicit teaching of transition phrases in writing, strategies for determining text organization, process analysis, word banks, chunking information, prompts, Mnemonics, interactive projects, discussion, Socratic seminars

Tools: learning logs, math manipulatives, graphic organizers, math models, computer software,

Programs: Kansas Learning (Reading/Writing) Strategies, Cognitively Guided Instruction (Montague & Dietz, 2009), cooperative learning, Cover, Copy and Compare, Touch Math©, LAP strategy (Test& Ellis, 2005), Graduated Sequence of Instruction (Maccini, Mulcahy, Wilson, 2007), Algebra instruction (Witzel, 2005)

2.1. d **Maximize transfer and generalization**

Transferring knowledge from one context to another indicates deep understanding. Knowledge is not retained in isolation. Explicitly teaching how new information relates to old increases retention and increases relevancy to students.

Familiar evidence based practices: project based learning, Mnemonic devices, memory strategies, multiple opportunities for guided and independent practice, shaping, Cornell notes, Community Based Instruction,

Tools: learning logs,

Programs: Cognitive Instruction Strategy, Comprehension strategies (Tovani, 2004), Kansas Strategy Instruction, Collaborative Reading Strategy

Indicator 2.2 **Provide options for language, mathematical expressions, and symbols**

Instruction to address this indicator should be focused on: assisting students in breaking down language and mathematical expressions into component parts to understand the content; demonstrating the influence of languages on each other; and, highlighting the relationship between structure and content of text (language) and mathematical expressions.

2.2. a **Clarify vocabulary and symbols**

Instruction should focus on teaching students how to use supports to connect content vocabulary and the symbols to understand text. Pre-teaching the meaning of editing, mathematical and scientific symbols will be important to ensuring all students approach the text with sufficient background knowledge to understand new, complex material. Instruction should include multiple meanings of words across content areas, figurative language, idioms, slang vs. formal speech, jargon; and the placement of numbers and symbols (exponents for math vs. subscripts in chemistry). This guideline also offers a venue for teaching students how to use technology wisely and assess the quality of website information.

Familiar evidence based practices:

Flash cards, poems, Mnemonics, physical prompts, teaching the language of math and science, academic vocabulary instruction, teaching registers of speaking, visual prompts like posters, word walls, teaching Latin and Greek prefixes, root words and suffixes

Tools: embedded hyperlinks to dictionaries, sources of background material into their work, interactive notebooks, Cornell notes, computer software

Programs: *Building Academic Vocabulary* (Marzano, 2005), Janet Allen's *Words, Words, Words,*

2.2. b **Clarify syntax and structure**

Instruction should be focused on providing helping students recognize the rules of language (syntax): the grammar and organization of spoken and written language in different contexts (formal and vernacular) and content areas; the properties of mathematics, the structure of mathematical expressions and word problems; different text structures, organizations used in content areas. Explicit instruction should clarify the relationship between new and old material; in other words, the explicit instruction provided will first teach students the rules of grammar and mathematical expressions and then highlight the connections between new and old information. Sequence of mathematics instruction should follow this progression:

concrete →picture representation→ abstract (number sentence)

Familiar evidence based practices: using different colors/fonts to identify new and old learning, direct instruction in syntax of language of different content areas, visual displays,

Tools: computer software, comprehension guides, viewing or reading guides, graphic organizers, concept maps, number lines,

Programs: Cognitive Instruction Strategy, Comprehension strategies (Tovani, 2004), Kansas Strategy Instruction, Collaborative Reading Strategy, Peer Assisted Instruction

2.2. c **Support decoding of text, mathematical notation and symbols**

Instruction provides students with multiple opportunities for practice. Math instruction focused on: teaching the language and vocabulary of mathematics, recognizing features, patterns and language of word problem, developing strategies for solving problems, understanding magnitude and value of numbers, counting principles, knowledge of math properties. Reading instruction focused on fluency, automaticity in word recognition, phonological awareness, use of supports (text-to-speech)

Familiar evidence based practices: word walls, multiple readings of text, use of manipulatives, number lines, charts, graphs, verbal and written language to teach word problems, teaching language of word problems , strategic counting, flash cards, modeling/think aloud, index cards, games,

Tools: audio, visual, tactile forms of text, comprehension (reading, viewing) guides, computer software, Math ML

Programs: sentence stems (Billingsley, 2014), comprehension strategies (Tovani, Beers, Vaughn, Burke, Calkins, Fountas and Pinell, Palincsar), Read Naturally, Wilson Reading, Enhanced Anchor Instruction (University of Kentucky), Thompsons 11 difficulties in learning math vocabulary, Keyword (Mastropieri and Scruggs), Language!

2.2. d **Promote understanding across languages**

Instruction should address the influence of languages on each other (roots, affixes, etc.) to assist students with determining meaning/definitions of new words/terms. In math and science, attention should be directed to understanding the influence of languages on creating symbols and terminology. Instruction should build on student's current language skills, whether native speaker or ELL; this is especially important for students with a language based disability.

Familiar evidence based practices: connect background knowledge to math problems and new vocabulary, highlight areas of application to daily living, teach problem solving with manipulatives or diagrams/pictures, flexible grouping (pairing strong and weak students), repetition of key words/instructions (pair with visual

reminders/graphic representations), make explicit interdisciplinary and cultural connections,

Tools: use of concrete objects/demos to teach vocabulary, word walls, Plain English versions of text/word problems, computer software

Programs: *Building Academic Vocabulary* (Marzano, 2005), Janet Allen's *Words, Words, Words,*

2.2. e **Illustrate through multiple media**

Providing students with choice in how they access information requires identifying the main points/ text- based information, theme or focus of a text. Having identified the information that is important for students to learn will guide the selection of a set of appropriate alternative media. The most important consideration is to make explicit what information needs students will need to pay close attention to and learn. This choice should be provided to assist students who struggle with information delivered in print in understanding the information.

Familiar evidence based practices: project based learning, hyperlinks in text, using digital features embedded in text, range of texts to accommodate reading (decoding and comprehension) levels,

Tools: video, diagrams, movie clips, one-, two- or three-dimensional products, technology

Programs: Scholastic Action (http://action.scholastic.com/Differentiated-Articles), Read Works- (http://www.readworks.org/) ,

Indicator 2.3 **Provide options for perception**

Perception is not limited to sight; it involves feelings about physical environment and past experiences, our intuition and thought processes. Use of technology helps to create welcoming environments that foster positive interactions with content information and learning experiences.

2.3. a **Offer ways of customizing the display of information**

Customizing the display of information involves more than adjusting its size, shape, color or brightness. To make the information more accessible, one consideration could be to determine whether a one-dimensional presentation can be made three-dimensional. Other important considerations could be adjusting the pace of instruction/information delivery, how material is organized/located and important points highlighted. The point is to make the changes to important information significant enough to attract student attention. The same considerations apply to graphics. Many software programs make these text alterations easy; it is important to

determine if the program can allow any of the suggested changes can be made to the text. Back lighting of text can also be helpful.

Familiar evidence based practices: adjusting text features: color, bolding, font size, font selection (serif vs. non-serif), text features (bolding, underlining), highlighting, fonts that assist students with dyslexia, spacing of text,

Tools: computer software, e-readers, text- to- speech capabilities, audio books, Start to Finish Books,

Programs: TarHeel Reader, Read Please, elibraries, Digital Public Library of America (http://dp.la/),

2.3. b **Offer alternatives for auditory information**

Classrooms supports for students with difficulty hearing or processing auditory information benefit all students. Providing a visual posting of important information like homework, daily agendas in the same place along with visual teacher reminders/cues (pointing/standing next to where information is posted) benefits all students.

Familiar evidence based practices: visual representations of sound or information, daily agendas and homework posted, copy of notes, written directions, rubrics, project requirements,

Tools: captioning, transcripts, multi-media, tactile supports

Programs: ASL

2.3. c **Offer alternatives for visual information**

To meet this checkpoint, consideration should be given to other ways in which information can be communicated or enhanced. Providing auditory cues to alert students to transitions, physical objects to support instructional objectives (hands-on science kits, finished products), or pictures with/without descriptions offer students additional support to maximize their learning.

Familiar evidence based practices: transition supports, hands-on learning, auditory cues,

Tools: timers, manipulatives, computer software

Programs: Project Based Learning,

Characteristic 3: Action and Expression

The principle of Action and Expression targets the strategic networks of the brain in order to develop strategic and goal-directed learners. These networks plan, monitor, organize and revise actions based on new or additional information. Effective instruction aligned to this principle provides students with multiple opportunities and methods to demonstrate their knowledge and skills. Providing multiple means for demonstrating mastery of content knowledge and/or skills relies heavily on the wording of learning goals. The wording of goals should identify the skills and knowledge to be learned; but not how mastery will be demonstrated. The flexibility in how students demonstrate mastery provides students with opportunities to develop the skills needed to become strategic, goal-directed learners. The flexibility for demonstrating mastery encourages physical demonstrations, the use of technology supports (both high-and low-tech), and self-management supports that assist the student in becoming strategic and goal directed. This principle emphasizes lessons that prompt students to identify and set goals as well as strategies for identifying making contributions to achieve them.

Indicators for Action and Expression

Indicator 3.1 **Provide options for executive functions**

To successfully graduate from high school and find success in post-secondary life, students with serious emotional disabilities must be able to set goals, plan and manage information, monitor their progress toward their goals and revise their goals or actions based on this information.

3.1.a **Guide appropriate goal-setting**

Helping students in the target population develop skills in self-determination and goal setting will increase their ownership of their learning. Assisting students in setting reasonable goals and revising them when necessary are two skills that this subgroup will need extensive support in order to master it. Revising goals is a skill that will be critical to developing the perseverance they must develop in order to graduate from high school and secure meaningful employment. The learning environment must engage the student's desire to participate in the learning activity. In order to set meaningful goals, the student must want to achieve something. All students need explicit instruction in how to set reasonable goals for themselves and have a range of supports available to support them in achieving them.

Familiar evidence based practices: setting class rules, personal data collection sheets, class or student incentive programs, behavioral or academic contracts,

Tools: contracts, goal charts,

Programs: Positive Behavior Interventions and Supports, Good Behavior Game, Self and Match

3.1.b **Support planning and strategy development**

Students need support to develop reasonable, appropriate plan for completing learning tasks/projects as well as a menu of strategies to execute the plan. With the overwhelming abundance of information available to students, instructional scaffolds must be provided to help them organize it. Research indicates that (especially at the secondary level) students need assistance with note-taking skills/technologies. Instruction should strategies for identifying important and relevant information that should be included in their notes. Developing the student's ability to plan and select appropriate strategies for completing the plan encourages students to ask questions rather than search for a single correct answer.

Familiar evidence based practices: visual/oral prompts, mentors/coaches, visual/oral reminders, structured groupings/pairings for feedback, chunking, timeline of steps using a backward planning process having the final product due date as the end point, individual timelines and due dates, individual conferences, templates, teaching question types and how to answer

Tools: models for completing a process, rubric, checklists, finished products, graphic organizers, charts, Cornell note-taking strategies, word banks, cloze methods

Programs: Backward Design (Wiggins and McTighe), Kansas Intervention Strategies, AVID,

3.1. c **Enhance capacity for monitoring progress**

Monitoring progress includes more than just charting progress to task completion; it involves engaging the student in reflecting on their strengths and challenges related to the task and reconciling it with the feedback they have received. Structures and supports will be needed to develop the student's ability to reflect and revise their goals, plans and processes when necessary.

Familiar evidence based practices: before and after activities to gauge learning or progress toward goal, self-assessment questions, quick conferencing, feedback that is personal, productive, specific and immediate, comments limited to 3 focus areas

Tools: learning logs, graphs or charts documenting progress, rubrics, portfolios,

Programs: ticket in and out, Curriculum Based Measures, Check in/Check out/ Positive Behavior Intervention Supports,

Indicator 3.2 **Provide options for expression and communication**

Allowing students to choose how they communicate their knowledge increases the accuracy of conclusions made about the depth and breadth of their knowledge.

Furthermore, by allowing student choice in how student choose to demonstrate their knowledge can expose any gaps in their knowledge or understanding of the topic.

3.2. a Use **multiple media for communication**

Creating learning opportunities related to important and relevant topics provides a rich learning context for students to explore different problem solving strategies. By allowing students the freedom to choose how they will demonstrate their knowledge/skills, students can experiment with different approaches to completing the learning task. This experimentation can make the task more relevant and authentic as well as build their repertoire of problem solving abilities and their ability to self-assess. This checkpoint relates directly to the Engagement principle of self-regulation and its guideline on optimizing relevance, authenticity, and value.

Familiar evidence based practices: menu of essay topics or acceptable products to communicate knowledge, quick conferencing, small group/paired debriefing,

Tools: software products (Power Point or I Movie), digital products

Programs:

3.2. b Use **multiple tools for construction and composition**

Providing a menu of tools and other supports during the composing and constructing of products that demonstrate the student's knowledge creates a learning context in which students are likely to find success. A welcoming and supportive learning environment encourages student participation. The primary role of these supports should be helping students transfer the ideas in their head to a format that can demonstrate their level of understanding and mastery. Providing students with assistance in getting started would be included in this checkpoint.

Familiar evidence based practices: speech-to-text, story starters, choice menus,

Tools: computer software- Draftbuilder, Read, Write, Gold, word prediction software, graphing calculators, computer-assisted design software, manipulatives,

Programs: Manage Choices (Allington2002),

3.2. **c Build fluencies with graduated levels of support for practice and performance**

Research has shown that having supports during practice as well as assessments improves learning. Research also has shown that developing a student's sense of efficacy translates into them working harder, monitoring/evaluating their progress more often and engaging in more self-regulatory behaviors. Having multiple ways to demonstrate their knowledge leads to a greater sense of ownership for learning.

Familiar evidence based practices: scaffolds during practice, mentors, models, feedback- especially mastery related, connections to authentic or novel situations, menu of choices and/or supports to demonstrate mastery, established wait time, preview/prompting, mnemonics, model reading/audio and text, guided reading or media viewing, interactive/synthesis notes, student-led IEPs, structured note-taking, visual fix up strategies, small group discussion with conversation starters or agenda topics, cooperative learning/reading circles, reciprocal teaching,, Read Aloud, video modeling, managed choice of products,

Tools: manipulatives, journal or learning logs, text-to-speech, text sets, comprehension graphic organizers or constructors (sticky notes), computer assisted instruction, computer software, flash cards, visual displays, descriptive rubrics, finished products to demonstrate varying levels of proficiency

Programs: Dense or Reflective questions (Burke, 2008), comprehension constuctors (Tovani, 2004), comprehension strategies (Beers, Vaughn, Burke, Calkins, Fountas and Pinell, Palincsar), Keywords (Mastropieri and Scruggs), Graduated Sequence of Instruction, Peer Assisted Instruction, Cognitive Strategy Instruction, Anchored Instruction, Cover Copy and Compare, visual thinking (Burke)

Indicator 3.3 **Provide options for physical action**

This indicator includes the tools or options students may need to physically demonstrate their knowledge. Specifically, this indicator addresses the requirements associated with task completion: time allotted, ways in which to respond to information (analyzing/critiquing/synthesizing) and methods for responding or participating in the lesson.

3.3. a **Vary the method for response and navigation**

This checkpoint defines navigation as identifying the options students can use to respond (pen, paper, computer, voice recorder, manipulatives), and time flexibility/requirements. It also includes any additional hardware students may need to use the computer or other digital devices (adapted keyboard, switch, joystick, etc.)

Familiar evidence based practices: menus of acceptable responses/demonstrations of knowledge or proficiency, low tech- thumbs up or down,

Tools: software, whiteboard,

Programs: Tic-Tac-Toe strategy of assignments

3.3.b **Optimize access to tools and assistive technologies**

Analyzing student needs to determine if currently available technology will suffice or additional is needed. Consideration should also be given to the interface between current hardware, additional hardware and software. Consideration should be given to make technology supports universally available for all students who need it.

Resources

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