Universal Access Principles for Curriculum & Instruction

National Center for the Improvement of Tools for Educators

(http://idea.uoregon.edu/~ncite/; Kameenui & Carnine, 1998, 2010)

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Scholars at the National Center to Improve the Tools of Educators (NCITE) synthesized 30 years of research on instruction across all academic content areas (Kameenui, Simmons, Baker, Chard, Dickson, Gunn, Lin, Smith, & Sprick, 1994; Dixon, 1994; Dixon, Carnine, & Kameenui, 1992; Miller, Crawford, Harness, & Hollenbeck, 1994; Grossen, & Lee, 1994). They set aside debates on the merits of one philosophical approach over another and concerned themselves with a single critical question. Which empirically validated characteristics are essential to the efficacy of curriculum and instruction for diverse populations of students? The answer to this question was summarized in the identification of the Universal Access Principles for Instruction. These principles include (a) identifying major concepts, (b) activating prior knowledge, (c) utilizing conspicuous strategies, (d) providing mediated scaffolding, (e) strategically integrating content, and (f) engaging students in judicious review (Kameenui & Carnine, 1998, 2010). Before addressing the 6 universal access principles, however, a description of the nature and needs of diverse learners is offered as a rationale for strengthening and broadening the focus of instructional planning for all students.

Characteristics

1. Lack sufficient knowledge of self as a learner (Billingsley & Wildman, 1990; Palincsar, David, Winn, & Stevens, 1991)
2. Lack of sufficient knowledge of task demands (Billingsley & Wildman, 1990; Palincsar et al., 1991)
3. Feel inadequate as learners and attempt to avoid feelings of failure by engaging in one or more of the following behaviors: (a) withdrawing, (b) feigning interest, (c) shifting blame to an external agent, (d) selectively forgetting assignments or completing the wrong assignment, (e) procrastinating, (f) cheating, and (g) lowering expectations of self (Paris, Wasik, & Turner, 1991).
4. Generalize a sense of failure in one area to a low perception of competence across all academic tasks. They exhibit a sense of low perceived competency in spite of average or high ability (Johnston & Winograd, 1985; Paris, Wasik, & Turner, 1991).

5. Poor tacit knowledge (Chan, Cole, & Barfett, 1987; Schunk & Rice, 1992; Rottman & Cross, 1990).

Needs

1. Instruction in how, when, and why to apply skills and strategies (Billingsley & Wildman, 1990)
2. The resources needed to complete a task (Billingsley & Wildman, 1990)
3. A need to receive explicit instruction in skills and concepts.
4. A need to receive explicit instruction in generalization strategies (Chan et al., 1987; Simmonds, 1990; Schunk & Rice, 1992).
5. Support in the acquisition of background experiences with content related pre-requisite skills and concepts (Weisberg, 1988).
6. A need for explicit instruction in order to link prior knowledge with current content (Weisberg, 1988).
7. A need for instruction in self-monitoring in order to make use of time and other resources (Malone & Mastropieri, 1992; Schunk & Rice, 1992).
8. Low achieving students benefit academically from attribution training. In studies that included academic strategy instruction without direct instruction in the covert cognitive components associated with learned helplessness, students did not exhibit increased academic achievement levels to the same degree as those who had instruction in academic strategies and attribution training (Schunk & Rice, 1992).

The characteristics and needs of students with disabilities and those with other learning challenges have also been addressed by the Center for Applied Technology (CAST). CAST (2011) established guidelines for universal design that include 3 broad categories: multiple means of representation, multiple means of action and expression, and multiple means of engagement. These guidelines are also embedded in the Universal Access Principles as defined by Coyne, Kameenui, and Carnine (2010).

Principles that Support Learning for Those At-Risk

Making learning accessible for students with a variety of learning needs requires planning and preparation. While providing a struggling student with a graphic organizer, a computer program, pre-printed notes, or additional time to complete a task might be warranted and helpful given that student's needs, researchers at the National Center to Improved Tools of Educators (NCITE) have identified instructional principles that are critical to achievement for struggling learners (Kameenui, Simmons, Baker, Chard, Dickson, Gunn, Lin, Smith, & Sprick, 1994; Dixon, 1994; Dixon, Carnine, & Kameenui, 1992; Miller, Crawford, Harness, & Hollenbeck, 1994; Grossen, & Lee, 1994). Debates on the merit of one

instructional strategy over another were set aside. Thirty years of empirical research across grade levels, content areas, general education, and special education was examined. Six principles emerged as essential in moving students who struggle forward academically. These principles have been identified as (a) identifying major concepts, (b) activating prior knowledge, (c) utilizing conspicuous strategies, (d) providing mediated scaffolding, (e) strategically integrating content, and (f) engaging students in judicious review (Kameenui & Carnine, 1998: Coyne, Carnine, & Kameenui, 2010).

Big Ideas (Explicitly Identified Major Concepts): Teachers who examine the big ideas embedded in an instructional unit, semester, or academic year and clearly define those major concepts facilitate acquisition of the foundational information needed for success in a content area (Boudah, Lenz, Bulgren, Schumaker, & Deshler, 2000; Joint Committee on Teacher Planning for Students with Disabilities, 1995; Wasta, Scott, Marchand-Martella, & Harris, 1999; Coyne, Carnine, & Kameenui, 2010).

___   Students have been given an overview of the key concepts and skills that they will be expected to know at the end of the unit currently being taught.

___   Graphic organizers, icons, photographs, and/or key vocabulary illustrate the major concepts to be mastered and are displayed prominently in the classroom.

___   Each lesson is aligned with one or more of the major concepts targeted for mastery.

___   Students can identify how the current lesson aligns with the unit plan.

Previously Mastered Skills & Concepts (Primed Background Knowledge): Assisting students in the process of assimilating new information with prior knowledge allows students to make meaningful connections that aid in the acquisition and application of new information (Joint Committee on Teacher Planning for Students with Disabilities, 1995; Hyerle, 1996; Tomlinson, 1999; Burke et al., 1998; Coyne, Carnine, & Kameenui, 2010).

___   Before beginning a lesson on a new topic or skill, students are engaged in instructional activities that assist them in identifying previously mastered concepts that are relevant to the new lesson objective.

___ Timelines, charts, and other visual aids are used to illustrate connections among previously mastered concepts and skills and current lessons.

___ Students have access to support materials such as dictionaries, reference books, multiplication charts, measurement conversion charts, and other items that would assist them in the transfer of prior knowledge to new or higher level concepts.

Strategies for Learning (Conspicuous Strategies): When students are made aware of the strategies that those who have mastery in a particular area use, the learning process is demystified. Students are able to be successful (Joint Committee on Teacher Planning for Students with Disabilities, 1995; McClanahan & Wicks, 1993; Hyerle, 1996; Tomlinson, 1999; Burke et al., 1998; Harris & Pressley, 1991; Rief & Heimburge, 1996; Frender, 1990; Andrade, 2000; Coyne, Carnine, & Kameenui, 2010).

___ Unit plans and lesson plans identify complex concepts and skills.

___ Strategies found to be helpful in the completion of complex tasks such as the use of graphic organizers and mnemonic devices are included in unit and lesson plan development.

___ Evidence of student involvement with the development and implementation of conspicuous strategies is evident in classwork assignments, homework assignments, cooperative group products, and bulletin board displays.

Instructional Supports (Mediated Scaffolding): Students often need assistance in developing organizational skills, in accessing information, in understanding complex concepts, and in demonstrating what they have learned. Strategies that support present levels of functioning and allow for the gradual withdrawal of support as higher levels of mastery are demonstrated facilitate motivation and increase students' rates of mastery (Joint Committee on Teacher Planning for Students with Disabilities, 1995; Hyerle, 1996; Tomlinson, 1999; Rief & Heimburge, 1990; Wasta et al., 1999; Coyne, Carnine, & Kameenui, 2010).

___ Unit plans and lesson plans identify complex concepts and skills.

_____ Routines for teaching strategies for complex task completion such as the use of graphic organizers and mnemonic devices are included in the unit and lesson plan development.

_____ Additional levels of support for targeted students are integrated into the overall plan for instruction and are available to all who may need them.

Example: Students with specific learning disabilities are often able to comprehend content, but have difficulty with reading fluency. They may benefit from listening to text on an audio tape if more than a few paragraphs or pages of reading are required in order to complete an assignment. Listening centers provide students with graduated levels of support. Students with reading fluency deficits, students with attention deficits, and students who learn best by listening even when their reading levels are adequate can access the level of support necessary for the task.

_____ Additional levels of support for targeted students are integrated into the overall plan for instruction. These strategies are designed to assist the student in (a) moving to a higher level of mastery, and/or (b) generalize skills across tasks, content areas, or settings.

Example: Specific students may have difficulty with organization. Highly structured methods for formatting their classwork, maintaining their calendar or day planner, and developing their content area notebooks may need to be established. A teacher, assistant, or peer buddy may need to provide (a) direct instruction in the specific organizational tasks targeted, (b) monitoring, and (c) acknowledgement of the use of the skill(s) for every defined task. The student should be given a checklist with icons or key words and phrases to help him/her self-check prior to receiving feedback from a peer or adult. As the student's proficiency increases, the number of steps listed on the checklist and the frequency of buddy or adult checks can be reduced. The completion of projects, cooperative learning tasks, and other complex, multi-step assignments might be facilitated by the same process with a whole class by providing multiple prompts during the first few assignments and gradually reducing the number of checkpoints and prompts used to cue and orient students as they demonstrate mastery.

Content Organization (Strategic Integration: Sequenced, Parallel, & Overlapping):
Strategic integration across units of study or content areas requires collaborative planning in many school settings. Students with learning difficulties need assistance in making connections within and among content areas. Retention, skill mastery, and motivation are

enhanced through content integration (Joint Committee on Teacher Planning for Students with Disabilities, 1995; Hyerle, 1996; Tomlinson, 1999; Burke et al., 1998; Rief & Heimburge, 1996; Boudah et al., 2000; Coyne, Carnine, & Kameenui, 2010).

____ The scope and sequence of skills and concepts outlined in the text have been aligned with the known strengths and needs of the students in the class.

____ Students' strengths and needs are assessed with regard to the unit scope and sequence.

____ Unit and lesson plan development reflects a consideration of related skills and concepts being taught in other content areas.

____ Concepts and skills are sequenced with a clear progression from concrete and simple to abstract and complex.

──── Parallel themes, concepts, or skills within the unit and across content areas are clearly identified.

Example: A study of whole number operations with regard to money during math would be a parallel topic with a study of basic economics (goods and services) in a social studies unit.

____ Overlapping themes, concepts, or skills with the unit and across content areas are clearly identified.

Example: The use of charts and graphs to compare data might appear in math, science, and social studies content.

____ Generalization of skills across content areas is reinforced.

Opportunities to Practice Skills & Concepts (Judicious Review: Sufficient, Distributed, Varied, & Cumulative): Review of key concepts and skills must be well planned and executed. Students with learning difficulties often have problems with retention and retrieval of information. In addition, many students with learning problems need a great deal of variety in order to stay task focused. It is important to include planned opportunities to review previously learned concepts and skills on an on-going and regular basis (Joint Committee on Teacher Planning for Students with Disabilities, 1995; Tomlinson, 1999; Burke et al., 1998; Rief & Heimburge, 1996; Coyne, Carnine, & Kameenui, 2010).

___ Daily opportunities to engage in a review of previously learned tool skills (skills necessary for completing higher level tasks such as capitalization, punctuation, basic math facts, or basic content area vocabulary content) are included in lesson plans.

___ A variety of strategies are used to review content and skills (games, question and answer periods, application in cooperative learning activities, etc.).

___ Major concepts and skills are reviewed periodically throughout the instructional unit.

___ Skills reviewed over a weekly or biweekly time frame reflect a cumulative informal assessment of the full scope and sequence previously taught.

The interventions, strategies, and process described above were researched in general education and special education classrooms. Students in general education achieve at higher rates when these interventions and processes are applied in the classroom. Students with special needs fail to achieve when these interventions and processes are omitted. What is nice to do for some is essential for others. The good news is that these are not general education or special education specific (Coyne, Carnine, & Kameenui, 2010). While the principles essential to content and skill acquisition are familiar to educators and can easily be incorporated into whole group lessons, selecting tools specifically tailored to the needs of a student with a disability and aligned with both environmental and task demands can sometimes seem to be a challenge. The following procedures facilitate the inclusion of all six principles in the planning and implementation of instruction:

1. Form an interdisciplinary team.
2. Arrange all topics required in the state and local curriculum guidelines into units or themes that will (a) assist teachers and students in identifying major concepts, and (b) provide students with opportunities to make connections among the various content areas.

3. Align the state and local standards with the theme and topic outlines.
4. Utilize the Unit Organizer to plan an interdisciplinary unit across all content area strands.

5. Utilize the Unit Organizer to plan individual content area plans that align with the interdisciplinary unit.

6. Utilize the Content Organizer to plan lessons that are aligned with the state standards, incorporate the six universal access principles, and provide for the inclusion of a diverse group of students.

What we as educators and parents don't know can hurt the most vulnerable students. Having the knowledge of what is essential to learners with diverse needs empowers us all: educators, parents, and students.

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