



Kansas Effective Practices *Instructional Toolkit*

Implementing Research and Resources Into Action
Research Lesson 5: Differentiated Instruction

Differentiation – Descriptors and Methods

Differentiation of Curriculum

Curriculum differentiation is a broad term referring to the need to tailor teaching environments and practices to create appropriately different learning experiences for different students.

Based on the work of Keirouz, Farmer (1996) suggests typical procedures in the case of gifted and talented students include:

- Deleting already mastered material from existing curriculum,
- Adding new content, process, or product expectation to existing curriculum,
- Extending existing curriculum to provide enrichment activities,
- Providing course work for able students at an earlier age than usual, and
- Writing new units or courses that meet the needs of gifted students.

Developing curriculum that is sufficiently rigorous, challenging, and coherent for high ability students is a challenging task. The result, however, is well worth the effort. Appropriately differentiated curriculum produces well-educated, knowledgeable students who have mastered a substantial body of knowledge, and can think clearly and critically about that knowledge.

Based on the work of Maker’s model of differentiated curriculum, Farmer (1996) and Tomlinson’s work on differentiation, curriculum needs to be differentiated in terms of:

- [Content](#) – ideas, concepts, information and facts
- [Process](#) – how new material is presented; activities in which students are engaged; questions that are asked; teaching methods; and thinking processes developed by the student
- [Product](#) – opportunities to develop sophisticated products and/or performances targeted to specific audiences
- [Learning environment](#) – adaptations in the physical setting and psychological school/classroom climate in which learning occurs

Content	
Abstractness	Major focus of discussions, presentations, reading, and lectures should be on abstract themes, and theories – things that have a high potential for transfer. Facts and other concrete information should be the basis for the study of abstract issues and problems.
Complexity	Curriculum to be organized around broad-based, abstract themes. Use a multidisciplinary approach; exploration of themes and topics across the disciplines. Ideas that have a number of concepts, approaches, parts, interpretations, and solutions should be available for student exploration.
Variety	Gifted learners should be taught ideas and content areas not taught in regular curriculum. This is often called the “null curriculum” and includes subjects such as anthropology, economics, archaeology, topology, sociology, psychology. Provide opportunities for students to select areas of study (e.g., independent studies or contracts).
Operation for Learning Value and Economy	Design experiences to allow students to receive as much value for the time spent as possible. Organize activities to facilitate transfer of learning, memory and understanding of abstract concepts and generalizations. This comes from organizing instruction around key concepts or abstract ideas to be learned rather than arranging it in some other fashion.
Study of People	In order to learn how to deal with their own talents and possible successes, gifted students should study creative and productive individuals. Students should analyze the problems faced by eminent people and explore how they handled their problems. Students should examine personal traits, career and professional characteristics, and their social interactions.
Study of Methods	Students should learn methods of inquiry, investigation, and research used by scholars in different disciplines. They should practice these methods. Students should be given opportunities to focus on metacognitive thought and to explore how they think and learn.

Process	
Higher Levels of Thinking	Students are asked to think on the higher levels of Bloom's Taxonomy, on the levels identified by Frank Williams, and/or any other higher-level skills. Students should be involved in creative thinking, critical thinking, and problem solving. These skills should be actively taught.
Open-endedness	Divergent, not convergent, questions allow students to explore many options and allow students to see that there are many situations in life when no predetermined right answer exists. Provocative questions stimulate further thinking and investigation. Openness stimulates thought, permits and encourages divergent thinking, encourages responses from more than one student, and aids in development of interaction in which learning, not the teacher, is the focus.
Discovery	Create situations which allow students to use inductive processes to discover patterns, ideas, and underlying principles. Allow students to bring their own organizational structure to problems and situations. Encourage independent learning; the surest way to make it hard for a student is to make it easy for him. Provide lots of opportunities for investigation of problems, situations in which there is no right answer.
Evidence of Reasoning	Ask students to express their conclusions as well as the reasoning that led them to their conclusions. This allows students to focus on how they think and reason and to evaluate their thinking processes. Listening to reasoning and evidence also allows teachers to assess levels of thinking.
Freedom of Choice	Give students freedom to choose both learning experiences and topics. Offer students the opportunity to choose strategies and processes which best fit their learning styles and intelligences.
Group Interaction	Provide simulations and other structured and unstructured opportunities for students to work with other gifted students. Vary group organization to include pairs, small groups, and large groups. Include opportunities for peer evaluation.
Pacing	Present new material at a rate/pace which accommodates gifted learners. Do not expect gifted learners to wait for others to grasp a concept before they can move on to something they don't know. Compacting, contracts, independent studies are some things that can be used to adjust pacing. It is very important to maintain motivation and interest and to enhance students' willingness to accept a challenge. This does NOT mean hurrying through a lesson or removing wait time from questioning.
Variety	The teacher should use various methods to maintain the interest and to accommodate the different learning styles of the students.
Enabling Skills	Include learning of specialized skills that are "tools of the trade" of specific areas of human endeavor. The learning and usage of self-directed, independent learning skills is important.
Self-Understanding	Provide activities which develop self-understanding, recognizing and using one's abilities, becoming self-directed, appreciating likenesses and differences between oneself and others.
Evaluation	Allow for self-evaluation. Evaluate through authentic products. Provide a wide variety of types of evaluation. Allow for evaluation of thinking/problem solving process.
Other	Use strategies such as learning logs, journals, graphic organizers, creative problem solving, think-pair-share, synectics, mind mapping, two-sided debates (listing pluses, minuses, and interesting points about a topic under consideration), mentorships or apprenticeships, flexible grouping, learning centers, varying questions, role-playing, model making, labs, tiered assignments, compacting, contracts, and independent studies.

Product	
Result from Real Problems	Address problems that are meaningful to the learner. Address problems which might be encountered by professionals in a field.
Addressed to Real Audiences	Provide opportunities for students to present their products to the scientific community, city council, government area, classmates, another class, or a group of partners in education.
Transformation	Products should represent transformation of existing information or data rather than mere summaries of others' conclusions. Provide opportunities for original research, original art work, and collection of raw data. Force use of higher level thinking skills.
Variety	Encourage students to learn about and use a variety of products and to carefully consider the most appropriate representation of their content to a proposed audience. Allow for students to choose products that fit their learning and intelligence styles. Allow students to learn to use different media.
Self-Selected Format	Allow students to decide which format they want to use. Give them a menu of choices. Allow them to suggest their own new techniques, materials, and forms.
Appropriate Evaluation	Have the end products evaluated by the audiences to which they were intended, including peers. Students should do extensive self-evaluations of their own products during the project and after the project. Clearly lay out criteria for success in content and production. Each student will have different criteria for success. Allow for student evaluation on the basis of agreed-upon criteria for content and production. Set clear standards of high expectations for student products.
Other	Help students see the need for both creative and critical thinking; help them build a passion for the ideas being pursued. Require a synthesis of multiple sources of information in developing products. Give clear and ample directions as a way of ensuring quality, but leave room for student choice in the context of clear directions. Ensure the learning of required production skills, not just content. Communicate with parents regarding timelines, assessment, rationale for product, and how they can help. Consider allowing students to work on products in class when they have compacted out of an assignment or when they do not need practice for homework. If possible, allow an advanced learner to work with a mentor.

Learning Environment	
Learner Centered	Focus on the students' interests and ideas rather than those of the teacher. Emphasize student discussions rather than teacher talk. Patterns of interaction have the student as the central focus.
Independence	Tolerate and encourage students to take initiative for their own learning. Students should solve problems such as classroom management or discipline, and make their own decisions instead of depending on the teacher.
Openness	Be sure the physical environment is open to new people, materials, and things. The psychological environment must also be open to new ideas, diverse values, exploratory discussions, and freedom to change directions and meet new situations.
Acceptance	Attempt to understand the students' ideas and points of view. Listen to ideas, request clarification, elaboration and extensions of ideas before approving or challenging them. Make judgments at appropriate times – not when creative production should be occurring. Make evaluations that assess strengths and limitations rather than judgments which imply rightness or wrongness.
Complexity	Arrange a physical environment which includes a variety of materials; have sophisticated and varied tools, references, and books; a representation of varied cultures and intelligences; a variety of databases and electronic resources. Include challenging tasks, complex ideas, and sophisticated methods.
Variety in Groupings	Groupings should approximate real-life situations. Allow the students to make choices about how groups are set up. Be sure the types of tasks and purposes of learning experiences are varied.
Flexibility	Allow for flexibility in scheduling, requirements to be met, and criteria for evaluation. Give extended time for complex projects if necessary. Be prepared to take advantage of “teachable moments.” Allow for unstructured time. Allow for student autonomy whenever possible.
High Mobility	Allow movement in and out of the classroom. Provide access to different learning environments, materials, and equipment.

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