Entry Points for Differentiated Mathematics Instruction

Why Is This Strategy Useful?

Experts suggest that differentiating instruction in response to a student’s readiness, interest, and/or learning profile can improve student outcomes in all content areas. Readiness refers to the skill level and background knowledge of the child. Interest refers to topics that the student may want to explore or that will motivate the student. This can include interests relevant to the content area, as well as outside interests of the student. Finally, a student’s learning profile includes learning style (i.e., as a visual, auditory, tactile, or kinesthetic learner), grouping preferences (i.e., individual, small group, or large group), and environmental preferences (i.e., lots of space or a quiet area to work). A teacher may differentiate on the basis of any one of these factors or any combination of factors.

In order to make students’ early experiences with a topic more engaging and motivating, teachers can differentiate instruction by using “entry points” so that learners can explore a topic through as many as five avenues: narrative (presenting a story), logical-quantitative (using numbers), foundational (examining philosophy and vocabulary), aesthetic (focusing on sensory features), and experiential (hands-on). By providing a variety of entry points, teachers not only reach more students but also invite their students to think about important problems in multiple ways.

Description of Strategy

Students are offered a variety of ways to “enter into” the study. Entry points can include:

- Narrational entry point – The student can tell a story or narrative about the concept in question. For example, as an entry point into the topic of "geometry" students would tell stories of its how they encounter shapes in everyday life.

- Logical-quantitative entry point – Students can approach the concept by invoking numerical considerations or deductive reasoning processes. Students can use data, numbers, statistics, musical rhythm, logic, or cause and effect relationships to explain the concept.

- Foundational entry point - The entry point through which students respond to the broader concepts or philosophical issues raised by a subject or work of art—for example, how math and music are related.

- Aesthetic entry point – The entry point through which students respond to formal and sensory qualities of a subject or work of art. For example: the geometry and perception of spatial relationships are used in a drawing of a painting or the intricate patterns on the surface of a beehive. This entry point emphasizes sensory and/or surface features, and activates aesthetic sensitivities.

- Experimental entry point – The entry point through which students respond to a subject by actually doing something with their hands or bodies. For example: Use data to chart the growth of students in the classroom. This entry point is a hands-on-approach, dealing directly with materials, simulations, and personal explanations.
Note that differentiated instruction is not a single strategy but rather an approach to instruction that incorporates a variety of strategies. Teachers adapt the instructional strategies to students’ skills. Teachers can differentiate content, process, and/or product for students. Differentiation of content refers to a change in the material being learned by a student. For example, if the classroom objective is for all students to subtract, some of the students may learn to subtract two-digit numbers, while others may learn to subtract larger numbers in the context of word problems. Differentiation of process refers to the way in which a student accesses material. One student may explore a learning center, while another student collects information from the Web. Differentiation of product refers to the way in which a student shows what he or she has learned.

Research Evidence

At least one case study has documented positive effects of the differentiated instruction approach in the classroom on students’ performance. In successful schools, differentiated instruction efforts included focused professional development. Appropriate staff development for transfer would likely include: ensuring multiple staff development options linked to teacher readiness, interest, and learning profile; making available time and coaching as teachers develop differentiated curriculum and instruction; encouraging peer collaboration among teachers for planning, carrying out, and assessing effectiveness of differentiated instruction; setting expectations for classroom implementation of ideas gained through staff development; and establishing teacher-administrator understanding and collaboration for mutual growth through classroom observations.

Sample Studies Supporting This Strategy


In differentiated instruction, classroom teachers make vigorous attempts to meet students where they are in the learning process and move them along as quickly and as far as possible in the context of a mixed-ability classroom. It promotes high-level and powerful curriculum for all students, but varies the level of teacher support, task complexity, pacing, and avenues to learning based on student readiness, interest, and learning profile. This case study describes the implementation and benefits of differentiated instruction based on the experience of the several public schools in the United States and Canada.

Additional Resources

Dyck, B. Applying Differentiated Instruction: In Front of the Class. Available at: http://www.nea.org/teachexperience/ifc080422.html


Strickland, C.A. Differentiated Teaching for Learner Profile Available at: http://www.hhh.k12.ny.us/uploaded/PDFs/DI_Pdfs/Day_1/strickland.pdf