

# Significant Cognitive Disabilities

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Student's Name

Professor's Name

Course Title

Date



## Question 1

The six essential principles for math instruction for all students include the equity principle, the curriculum principle, the teaching principle, the learning principle, the assessment principle and the technology principle.

- The equity principle requires that all students are given strong support and high expectations to achieve excellence in their mathematical studies.
- The curriculum principle requires the students to be exposed to a collection of activities that contribute to their grades and ensure that they actually learn and not just cram. In other words, the important mathematical lessons must be spread out rationally depending on the level and ability of the students (Agran, Mithaug, Martin & Wehmeyer, 2002).
- The teaching principle expects the teachers to know what the students and need to learn, and thus, challenge and motivate them to learn more and learn well.
- The learning principle requires the students to understand what they learn, and build new knowledge from practice and prior knowledge.
- The assessment principle is based on the fact that assessment provides useful information to both the students and the teachers with regards to what should be learnt and what has been learnt. The principle, thus, requires relevant assessment mechanisms for all students.
- The technology principle acknowledges the role of technology in teaching and, as such, requires that the students and teachers are not left behind in their practices.



## Question 2

Functional academic math skills include identifying numerals, matching them to sets, using a calculator, performing math operations like addition, subtraction, multiplication and division, solving simple story problems, identifying fractions, identifying the math symbols in an equation, knowing the place value of numerals, and understanding the sequence or pattern of a given set of numerals among others (Agran et al., 2002).

## Question 3

The Syracuse Community-referenced Curriculum Guide for Students with Moderate to Severe Disabilities is a guide that addresses the needs of students with respect to their functionality within the community setting. The guide targets both parents and teachers and aims at ensuring that the students get the kind of skills that would improve their abilities to live in the real world. With respect to functional academics, the guide helps in the formulation of IEP's and provides practical guides for decision making with regards to teaching the students with special needs. From this guide, the uniqueness of each student is given much consideration and there is no specified "right" approach but rather the "teachers" are encouraged to base their practice on the needs and abilities of their students (Ford, Schnorr, Meyer, Davern, Black & Dempsey , 1998).

## Question 4

According to Wolery, Ault & Doyle (1992), the four phases of learning that should be addressed in teaching functional math skills are acquisition, fluency, maintenance and generalization. Acquisition implies learning a new skill, fluency is mainly about being able to use that new skill quickly and with ease, maintenance is the ability to use that skill over time, often facilitated by practice, and generalization is the student's ability to use



the skill across various situations and conditions.

## Question 5

Functional skills are defined as the skills needed by the student to live in the real world. This means that they may not entirely be beneficial to their academic endeavors but will certainly impact their lives in the community (Agran et al., 2002). One such important skill is writing a check. Usually, the amount of money on a check is written in both words and figures. This means that students must be able to identify and write values in words and in figures. To teach this skill, the students could be asked to write values in words during a general curriculum exercise. It is a problem for both the disabled and non-disabled students and, as such, it may be relevant to all of them. This can be accomplished both in a math class and in a language class to improve maintenance and generalization among the students.

## Question 6

Considering that functional skills are best embedded in academic content to ensure that the students get adequate exposure to both the general and functional curriculum, it is important to note that these functional skills are generally important in the lives of these students. They should, thus, be spread out across the subjects for maintenance and generalization. These concepts should be incorporated into the learning experiences of the students as functional routines like gym lessons in science, math, dancing and language classes, first aid lessons in science, agriculture, music, dancing and art classes, as well as safety lessons in science, math, agriculture, dancing and art classes (Agran et al., 2002). The key is to incorporate the lessons in all areas where they may be considered relevant since it may be difficult to schedule special classes without compromising on the general curriculum. In addition, these lessons would be helpful to all the students and there would be no point in offering them only to those with disabilities.



## Question 7

- a) Science literacy implies being able to read, write and think about the real world from a scientific perspective like the effects of pollution on the environment, identify poisonous substances by reading a product package, understand the impact of an activity like cutting down trees on the environment, among other things. Generally, science literacy is about using the knowledge obtained from a science lesson in the real world to influence one's choices.
- b) The general education science class incorporates nondisabled students as well. This means that the students with SCD are able to interact with their nondisabled counterparts and even learn from observation. Including these students in the general science classroom is, thus, a great opportunity to boost their learning by allowing them to share knowledge and experiences with their nondisabled counterparts who may have had much exposure to the scientific elements being discussed. Science literacy is mostly acquired through observation and participation and as such the general science classroom offers the best chance for these activities.

## Question 8

The six SCREAM strategies for systematic teaching are based on the variables namely structure, clarity, redundancy, enthusiasm, appropriate rate and maximized engagement (Agran et al., 2002). Structure implies having a well-organized lesson plan such that both the teacher and the students are well aware of the purpose and organization of the lesson, as well as how it fits in with the rest of the lessons in the past and the future.

Clarity implies the need to understand the lesson's expected learning outcomes such that the teacher is able to know when they need to elaborate more. It is also about communicating clearly and naturally,



using examples where necessary and allowing for questions where clarity has not been achieved.

Redundancy requires the repetition of key words to ensure that the students grasp the concept in question and are able to gain fluency in it. Enthusiasm takes on the role of motivating the students and getting them interested in the lesson thus allowing them to focus and learn as much as they can. Appropriate rate implies attaining a speed that is neither too fast nor too slow for the students. This is achieved by understanding the needs and expectations of the students and thus aligning one's teaching style to their learning style. Maximizing engagement is mandatory in improving fluency and maintenance in that the students are expected to participate in the lessons and thus learn through practice.

## Question 9

When planning for different types of learning, it is important to establish both the lesson objectives for the general curriculum and the IEP goals for the students with SCD (Agran et al., 2002). Then the instructor is expected to incorporate suitable strategies for all the types of learning that are expected, usually with the help of a special instructor so that the functional content is embedded in the academic content for factual, discrimination, procedure and concept learning.



# References

Agran, M., Mithaug, D. K., Martin, J.E., & Wehmeyer, M.L. (Eds.). (2002). *Self-determined learning theory: construction, verification, and evaluation*. New York: Routledge.

Ford, R., Schnorr, L. Meyer, L., Davern, L., Black, J., & Dempsey, P. (Eds.). (1998). *The Syracuse community- referenced curriculum guide*. Baltimore, MD: Paul H. Brookes Co.

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