Academic Asynchrony

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Social, physical, emotional, and cognitive developmental rates for gifted children do not correspond to each other and – except for physical development – do not necessarily correspond to age peer norms. Giftedness itself causes asynchrony; that is, it causes children to be out of sync with other components. Gifted Children by definition have a mental age that does not correspond to their physical age, and their emotional maturity may not correspond to either of them. There is also a close intertwined relationship between emotion and cognition, which sometimes leads to perfectionism in gifted children. Elementary classroom teachers see this in children who become frustrated and angry when they do not easily master a difficult skill. Asynchrony can also exist *within* one of these components. In describing the gifted child, Linda Silverman notes that socially, physically, emotionally, and cognitively the gifted child develops at rates that do not correspond to each other and – except for physical development – they don't necessarily correspond to age peer norms. Silverman also points out complexity in the emotional and cognitive development of gifted children and the close, intertwined relationship that emotion and cognition have to each other. She goes on to show that asynchrony can exist *within* one of these components, for example the child who is emotionally mature beyond his years in one area and very much with age peers in other areas of emotional development. (Silverman, 1993).

In the classroom, the teacher is interested in cognitive asynchrony that occurs both between different content areas and within a single content area, especially when the content area is in the student's area of giftedness. This latter kind of asynchrony may be less common, and it is certainly more difficult to diagnose and treat in the classroom.

The focus of this article will be asynchrony in terms of academic development seen in elementary children in third- and fourth-grade self-contained classrooms for the gifted. After a general discussion, particular attention will be given to individual cases of asynchrony *within* a content area. How do teachers find it? And, once found, how do teachers deal with it?

General Discussion

Teachers work where theory meets practice. They seek to bring together knowledge of the student gained through a variety of assessments and an appropriate curriculum. This is a task made much more complex because of academic asynchrony.

In delivering a curriculum to a student or group of students, the teacher must be aware of the child's developmental readiness to learn, which refers to the set of skills and knowledge in place for learning to progress. (NAEYC, 1998).   Pre-assessment in the classroom can reveal readiness. In reading, for example, there are readiness skills that precede the actual decoding of text and making meaning from that text (Varaprasad, 1997). Even after the student reads, there is a continuum of skills that develop in something of a sequential order. For example, literal interpretation generally precedes interpretive reading (Robbins, 1997).

 In its simplest form, asynchrony in the classroom manifests itself in children who are well beyond grade level in their areas of giftedness, while at grade level in other areas. It is common to see students in a gifted classroom who are a few years above grade level in math, but on grade level in reading. Just as common are those who are several years above grade level in reading, but on grade level in math. Some are advanced to one degree or another in all academic areas. These variations can be addressed by having flexible grouping in core areas, for example, reading and math groups.

There are a number of ways to ensure the flexibility of grouping. In reading, for example, the teacher can teach a skill to the whole class and have students apply and practice the skill using materials at the appropriate reading level. This approach works well with many reading skills that are not necessarily sequential in nature such as studying the motivation of a character or finding a theme. Literature circles with common role assignments also work when books are on different reading levels. In math computation, a teacher might teach to the highest group first and allow all others to participate in the lesson up to the point of an assignment. Then, as this highest group begins their practice, the next group is instructed. By rotating through the groups in this way, children are exposed to mathematics at a higher level and, as they begin to catch on, they can move into a higher group. The value of this approach in both reading and math is that students can move from group to group because they have some of the learning experiences of the other groups.

Widely varying abilities within one classroom can also be addressed by having open-ended individualized programs such as a Writing Workshop in which much of the topic choices are open, as are the genres and time constraints. Rotating consultations makes this kind of a program particularly individual in nature. Again, a focus lesson is taught to the whole group, and children apply the lesson on individual projects (Fletcher &Portalupi, 2001).

Another kind of uneven learning seen in the classroom might be the child who comes to school knowing how to multiply by 9 because someone has shown him a trick in mathematical patterning. If he does not have a foundational concept of multiplication, if he does not know how to multiply by other numbers, or both, he is not ready to go on past multiplying by 9 to new learning in mathematics. His developmental readiness to learn has not been affected, even though what he can do is uneven and out of sequence. He should be instructed at grade level.

Teachers also see children who have foundational holes in their learning, or whose learning is not sequential. A foundational hole may be thought of as a piece of learning that is basic to the discipline – that has been missed - not taught, or not mastered. Other learning may have progressed in the discipline in spite of this gap. For example, a teacher may find a student who can do some algebra but has not mastered basic facts in multiplication (e.g., the student may still be counting to do multiplication). Perhaps a parent or older sibling has taught algebra, or perhaps the student is gifted in math and just picked up the learning elsewhere or figured it out. Perhaps the proper foundations in multiplication were not taught or mastered. In any case, there is a gap in learning, and this student needs to pick up foundational skills and should be instructed at the level where significant holes occur. If grouped by ability level, his progression may be faster at certain points than others in the group, thus the need for the grouping to be fluid and flexible. This student may stay in a lower group just long enough to pick up some foundation. When he is nearly ready to move to a new group, usually felt y the child and documented buy the teacher, he can be assigned part of his group's work and part of the next-higher group's work for a short period of time, perhaps a week to a month, and then moved full time to a higher group. Extra homework over a long weekend or a school break in winter or spring sometimes helps a student complete the bridge to the next group.

Academic asynchrony can occur *within* the student's area of giftedness. This asynchrony occurs when a student is on two or more widely different developmental levels *within the same content area.* Such a situation presents unique challenges in the student's readiness to learn. Differentiation of the curriculum must be highly individualized in cases like this. The following examples of this latter type of academic asynchrony highlight the complexity of meeting needs on a variety of levels in one content area for individuals.

The Case of Anthony in Literacy

When Anthony was in third grade, he was reading on a seventh grade level, four years above grade level. His comprehension, oral reading fluency, and critical thinking with literature at this level reveal an independent reader as measured on the Qualitative Reading Inventory. Other test scores such as Degrees of Reading Power and the Iowa Test of Basic Skills affirmed that Anthony was solidly well above his grade level in reading.

However, when Anthony was asked to write a simple paragraph on a familiar topic, he would start to cry. He was frustrated with himself because he felt that writing a paragraph was beyond what he could do. After the teacher would talk with Anthony about the experiences he needed to put in his paragraph, and do a one-on-one pre-writing exercise with him, Anthony would return to his seat and produce a basic paragraph.

One day the teacher did an exercise with the whole class in which she asked, "How do you *think*? Close your eyes. When I say 'dog', do you see in your mind a picture of a dog, the word d-o-g, or something else?" Anthony saw something else because he thought mostly in symbols. There were a few other children who had a word/symbol combination kind of thinking. This exercise of "How do you think?" is one both children and adults like to do in groups because they are always surprised to find that all others do not think as they do. So a game can be made of it with the class.

The teacher went on to ask all the students, "How do you dream? How many of you dream in color? In black and white? In pictures, words, or symbols? Is there music in your dreams?" While everyone in the class learned something interesting, the teacher has learned that, for Anthony to write, he had to translate his thoughts into words because he did not think in words. Just as someone learns a foreign language and can read it much earlier than they are comfortable speaking and writing it, Anthony is developmentally in two very disparate places in literacy because a translation step needs to be made in his thinking in

order for him to write. And while Anthony is embarrassed and frustrated over this, the teacher could help him understand himself enough to relax and progress from where he was. The teacher could teach him pre-writing exercises or allow him the freedom to talk it over with someone before he began to write. Anthony's parents, who had a hard time when Anthony has a writing assignment for homework, were also helped to understand and support him.

Anthony illustrates academic asynchrony very well in the complexity in his cognition and its interrelationship with emotion. One can see that he is developmentally in two different places within the same content area of literacy.

The Case of Charles and Gerald in Math

Third graders Charles and Gerald both had parents who were engineers, recruited from China by high tech companies. Although Chinese was spoken at home, both boys were fluent in English and did not qualify for special services in language. Beginning of the year assessments revealed that both were about three years above grade level in math computation, while they were on grade level in problem solving ability. While it is not unusual to see a difference between computational level and problem solving level, these boys had a gap that was unusually wide. The disparity they experienced in math may have been due to a translation step that needed to be done mentally, causing the problem solving to be more challenging. Perhaps having English as their second language contributed to their academic asynchrony. The disparity may also have come from computation instruction at home without concomitant problem solving work.

Their pre-assessment included computation tests that were not timed. Much of what they were able to do was because they had no foundational holes and they understood patterning in math. They understood math as a system, a pattern, and even a puzzle where one reaches a correct solution. They did not yet understand mathematics as a tool and can be used as an application to solve a unique problem.

An appropriate instructional strategy was developed for the boys that allowed them to have some guided practice to enhance facility in computation about 2 years above grade level and moved them at a fast pace here, while giving support to their problem solving skills closer to grade level. In addition, logic puzzles, chessboards, and other extensions were made available to them. Conferencing with their parents to explain math instruction

revealed that both boys had picked up some math here and there - a little parent tutoring, some help from an older sister who understood her brother's love for math. In addition, language as a factor in problem solving was also discussed. Because these parents were so conscientious, the teacher assured them that there were great benefits to speaking two languages and that the school was in support of their efforts to have bilingual children.

Charles and Gerald illustrate academic asynchrony in that they were in two widely different developmental stages within the same content area – math. Their giftedness in mathematics accentuated the asynchrony they experienced when confronted with challenges in problem solving and dealing with word problems at grade level.

On a side note, teachers can also identify the opposite asynchrony in students in relation to math. For example in simulations or other complex, challenging situations, a student encounters a problem and understands the solution is mathematical. He or she even has a general idea about how to reach a solution. But the student hasn't yet learned the algorithm or enough foundational information that can lead to the solution. Often this is just brushed off as being intuitive. However, a closer look might reveal solid concepts in place without the corresponding skills development.

The Case of Nancy in Reading

Nancy was also an English-Second-Language student. In addition to being in a full time, self-contained classroom for gifted students, Nancy was grade accelerated, making her chronologically a year younger than most of the other students. Nancy's interpretation of literature was very literal. She did not understand figurative language and struggled to infer what was not directly stated. Testing of reading ability repeatedly showed that her inference skills were in a completely different place than all other sub-areas of reading.

Nancy was above grade level in all academic areas, even after being grade accelerated, and she was socially and emotionally well adjusted in her third grade class. There was only this one sub-area of reading where she struggled. She did not seem frustrated or upset by this, but she was somewhat aware that she was missing something. She also illustrated asynchrony generally in that she was out of sync with her age peers in all areas except inference skills in reading and in physical development.

The teacher provided Nancy with many opportunities to read and discuss good literature that was well above grade level. She also encouraged Nancy to use her spare time

in class to read fairy tales, fables, and other literature that would help her make figural connections in literature. At the same time, inference skills and understanding imagery in literature were targeted to help Nancy bring them more in line with her other skills in reading. Graphic organizers were used with cartoons to help her express what she saw and what she knew already and then encourage the inferential leap to deeper understanding. (Vaninwagen, 2003). Nancy's parents were made aware of her instructional program, and the teacher noted that Nancy's mother, who had limited English-speaking ability, was also very literal in her understanding of verbal language.

The Case of Ariel and Beth in Writing

Ariel and Beth exhibited the same kind of asynchrony. They might best be thought of as free spirits. Both read several years above grade level and both could tell a great story in writing. Their imagination, word choice, and voice were all quite spectacular. They wrote fiction as easily as non-fiction narrative. Alas, they were someplace else when it came to organization and conventions of any kind. Spelling, handwriting, grammar, punctuation, and capitalization were *below* grade level. To make matters worse, neither of them much cared. Their teacher found that open-ended writing workshop worked for them. When the time came for peer editing, sharing in groups, and being in the author's chair with a published piece, peer pressure was the motivating factor in moving the girls toward more legible, conventional writing, which did not come easily for either of them. But, both girls loved to write, and they were gifted writers. They just had to work at the conventions to highlight this strength. Their parents were brought in on this too, and they served as coaches for spelling and penmanship in homework assignments.

The Case of Charlie in Science and Literacy

Charlie was the kind of boy who would be unique in any class. With a photographic memory and a passion for science, Charlie could read scientific material at a high school level and higher in third grade. He could spew out the distances of the planets from the sun in miles or kilometers, and he found the fact that these distances vary over time because of elliptical orbits exhilarating. His writing, however, was illegible, and his organization skills, whether at his desk or in his written work, were non-existent. His ability to carry out a scientific investigation with any kind of careful methodology was out of the question. The only way to help Charlie was to harness his passion. Charlie loved having choices in

content, process, and product. For example, when the solar system was studied – Nirvana! – Charlie was given the opportunity to choose any sub-topic, research it in any way he liked, and create any kind of a product for a visual aid to go along with a written report. Careful attention was given to Charlie in terms of wrapping enough structure around this freedom for him to be successful. The teacher taught him a system of note cards for gathering information and keeping track of sources. He used a special folder for his project, and the teacher gave him specific times that each piece of the project – from gathering information to presenting it to the class – was due. Length of report in both number of pages and minutes, number of sources, amount of help available, and a scoring criteria were all presented at the outset. His parents were informed, and they helped monitor any of the projects that could be done at home (also specified in advance).

One project did not clear up all of Charlie's asynchrony, as his emotional maturity was years away from his cognitive ability. But highly structured assignments helped with the lack of maturity. Allowing some freedom in his areas of passion motivated him to work on writing and organization skills. Careful monitoring and instruction targeted to his areas of need brought him along and kept him happy at school.

Conclusion

All of the examples of uneven learning - the presence of foundational holes, the occurrence of varying levels of giftedness depending on the subject, and academic asynchrony within a single content area - present challenges to teachers. Teachers new to the field of gifted education often expect gifted children to have more even academic achievement. Teachers of classrooms with only some gifted students are stretched to provide a curriculum that is simultaneously two or more years above grade level and on or below grade level *in each subject taught*.

It is important to define different kinds of uneven development because from a practical standpoint, each kind mandates a different approach in terms of teaching expectations and strategies. For example, the student who is gifted in one area and on grade level in another can have some choices and open-ended assignments in areas of giftedness, while having sequential instruction with enough support and appropriate pacing to ensure progress in academic areas where special ability is not present. The student with foundational holes can have instruction intentionally directed at the areas that are weak

while allowing progress simultaneously with the rest of the class or a group within it. Children who exhibit academic asynchrony in single areas of giftedness also need intentional instruction and support directed at lower learning levels, while also being in need of a high degree of challenge and opportunity where their giftedness soars. Part of the culture in a successful classroom for gifted students is building in the understanding that their abilities lie in widely different areas, and the good thing about their class is that they all get to be where they need to be.

It is also important for parents, administrators, and academics to understand academic asynchrony in the elementary classroom. Parents sometimes would like the child accelerated when the teacher is finding foundational holes or other kinds of academic asynchrony that need to be addressed. The kind of complex precision teaching that occurs with differentiation is very different in an elementary classroom than the whole group teaching typical in high school and higher education. Understanding academic asynchrony helps all of us grasp the challenge of teaching our gifted students.

References

Fletcher, R., & Portalupi, J. (2001). *Writing workshop*: The essential guide. Portsmouth, NH: Heinemann.

National Association for the Education of Young Children, International Reading Association. (Position statement). (1998). Learning to read and write: Developmentally appropriate practices for young children. *Reading Teacher,* 52, 193-216

Robbins, R. H. (May, 1997). *Relationship between critical reading and selected measures of literal and interpretive reading.* Paper presented at the annual meeting of the International Reading Association, Miami, FL.

Silverman, L.K. (Ed.), *Counseling the gifted and talented* (1993). Denver, CO: Love.

Vainvagen, P. (1997). *Inference is a guess you make.* Tucson, AZ: Jephur Press.

Varaprasad, C. (1997). Some classroom strategies: Developing critical literacy awareness. *Forum,* 35 (3), 24-25.