
Third through sixth-grade mathematically talented students (n=306) enrolled in a flexibly paced mathematics course made achievement gains far beyond the normative gains expected over a one-year period. When compared to students several grade levels higher, these highly able students gained as much as 46 percentile points from pre- to post-testing. Above-grade-level testing revealed that the students possessed a wide range of mathematics knowledge prior to entering the course, with some students scoring at exceptionally high levels. With an individualized learning pace, some students as young as 4th grade completed the arithmetic/prealgebra sequence in their first year and returned the second year to successfully complete the beginning algebra sequence. Restricting such students to a rigid instructional pace and a “grade-appropriate” curriculum may place them at risk for declines in motivation and achievement.


Nine months after participating in a 3-week individualized, flexibly-paced precalculus course, 218 academically talented students who received placement into a subsequent advanced math course completed a questionnaire assessing perceived preparation for advanced level work, grades received in the placement course, and perceived challenge of the individually-paced course relative to the placement course. The students experienced greater challenge in the precalculus course than in their school placement course. Self-reported grades, as well as perceptions of preparation for advanced level study, suggest that IP courses prepare students to be successful in placement courses in their school. Mathematics courses which allow students to proceed at a pace of learning matched to their abilities, followed by appropriate placement in their schools, provide an educational opportunity to meet the special academic needs of talented students.

The paper explores the issues around early college entrance, providing strong research support for the effectiveness of this practice for selected students, but also offering a variety of alternatives for acceleration and enrichment that do not place students in a full-time college setting at a young age.