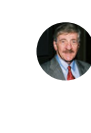


Curriculum Compacting: An Essential Strategy for Working with Gifted Students

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curriculum compacting: an essential strategy for working with gifted students

Abstract

Most exceptionally able children spend far too much time practising skills already mastered and repeating tasks or doing assignments which they have already covered. Joseph Renzulli proposes that, to avoid this reputation, teachers should *initially ascertain*, by pre-testing, *what skills exceptional children already have* and in what curriculum areas they are already knowledgeable and experienced. This means that teachers have to know what their aims and objectives are in, for example, mathematics, reading, science, etc. Then a pupil's learning programme can be developed from his/her level of competence and knowledge. He calls this process of assessment prior to planning 'Compacting'. The time thus 'saved' by omitting unnecessary practice or repetition can then be spent on extension activities.

Most classroom teachers have experienced the frustration of realizing that the work they are assigning is too easy for some of the bright students in their classrooms. Many teachers have also felt pangs of guilt as they watched these same bright students complete assignment after assignment of previously mastered review work that is not really necessary for them to complete. In many instances, teachers are just too busy trying to help students who are not working up to grade level and who do not understand the work to be able to find enough time to substitute appropriate and challenging assignments for students who do understand the material and need no further review.

Frustration inevitably develops for both teachers and students in these situations. Most teachers want to accommodate the special learning strengths of their above-average students but are frustrated by time constraints and the lack of an overall approach for substituting more challenging work for regular classroom assignments. Students who are academically years ahead of their classmates are frustrated because they are held accountable for daily requirements that are repetitious and unnecessary and that often lead to boredom and disenchantment with school in general.

One need only enter any classroom in the country

and observe the above-average students to realize that the work being assigned is usually too easy. A recent research study conducted by the Education Products Information Exchange Institute (1979), a nonprofit educational consumer agency, revealed that 60 percent of the fourth graders in some of the school districts studied were able to achieve a score of 80 percent or higher on a test of the content of their math texts before they had opened their books in September. Similar findings were reported in content tests with fourth- and tenth-grade science texts and in tenth-grade social studies texts.

Why school personnel consistently select books that are obviously unchallenging for not only above-average or superior students, but also for average students, is a question which must be addressed. Why so many superior students spend the greater part of every school year reviewing previously mastered material is a question which must also be dealt with through appropriate curriculum modification techniques. Any child (regardless of test scores) who can cover regular curriculum material in a more compact and streamlined fashion should be given the opportunity to do so, provided, of course, that acceleration does not cause undue stress or emotional problems for the child. If there is one important area in which many classroom teachers might be legally responsible for negligence, it is in their failure to provide above-average students with appropriate modifications in the coverage of regular curricular materials.

Although it is easy to criticize the regular curriculum as far as gifted children are concerned, it is a fact of life in America that we live in a 'credentialing' society, a society that measures progress by achievement tests, entrance examinations, and measures of competency in basic skills. Mastery of such skills is considered by many persons to be the major indicator of progress in traditional areas of the curriculum. The 'back-to-basics' movement and the recent interest in competency-based testing are deterrents to educators who are attempting

to broaden the school experiences of gifted and talented youngsters.

The dilemma between teaching the regular curriculum and providing enrichment experiences presents one of the most important challenges to persons who are attempting to create individualized and qualitatively different programs for gifted and talented youngsters. Providing special services for a few hours per day or week is certainly a step in the right direction, but we are fooling ourselves if we do not also take major steps to modify the regular curriculum. It is in the regular classroom that the majority of gifted students spend most of their time, and for this reason it is important to consider the regular curriculum in any overall programming plan for gifted and talented students.

The major purpose of this article is to present a systematic plan for compacting and streamlining the regular curriculum. The plan has two objectives. First, it is designed to relieve gifted students of the boredom that often results from unchallenging work in basic skill areas, and at the same time to guarantee the students, their parents, and subsequent grade-level teachers that the children have mastered standard competencies

necessary for later achievement. The second objective is simply to 'buy' gifted students some time so that they can pursue acceleration and enrichment activities. The plan is built around a management form called the compactor (Fig 1). This form should be completed cooperatively by classroom teachers and resource teachers and should be maintained as part of the gifted student's individual record. Every effort should be made to revise and update the form on a regular basis, and it should serve as a means for joint planning by the regular classroom teacher and the special education teacher.

Curriculum areas to be considered for compacting

The first column (curriculum areas) of the compactor can be approached in two different ways — by time periods or by topics. The most suitable approach will be determined largely by teacher preferences, the degree of structure that is inherent in certain curricular areas, and the independence that each student is capable of. The two approaches are directed toward the same objective, and the methodology for implementing each approach is essentially the same.

INDIVIDUAL EDUCATIONAL PROGRAMMING GUIDE The Compactor

Prepared by: Joseph S. Renzulli
Linda H. Smith

NAME _____	AGE _____	TEACHER(S) _____	Individual Conference Dates And Persons Participating In Planning Of IEP
SCHOOL _____	GRADE _____	PARENT(S) _____	
CURRICULUM AREAS TO BE CONSIDERED FOR COMPACTING <small>Provide a brief description of basic material to be covered during this marking period and the assessment information or evidence that suggests the need for compacting.</small>	PROCEDURES FOR COMPACTING BASIC MATERIAL <small>Describe activities that will be used to guarantee proficiency in basic curricular areas.</small>	ACCELERATION AND/OR ENRICHMENT ACTIVITIES <small>Describe activities that will be used to provide advanced level learning experiences in each area of the regular curriculum.</small>	

Check here if additional information is recorded on the reverse side.

FIG. 1.—The compactor (actual size, 11 × 17) (Copyright © 1978 by Creative Learning Press, Inc. All rights reserved.)

The time-period approach begins by having the classroom teacher examine each area of the regular curriculum in which a student shows a particular strength. For example, if a child's mathematics achievement-test scores are 2 years ahead of grade level and if the student has earned straight A's in arithmetic for the past 2 years, it is safe to assume that this curricular area should be considered for compacting. Information from student records and informal discussion with previous teachers should give a fairly good idea of how advanced a child is. This information is important because it will give a teacher some direction regarding optimal time periods for compacting. In cases of extremely advanced ability, and in highly sequential subject matter areas such as mathematics or reading, it is conceivable that a compacting plan could be developed for an entire school year. In other cases it may be more advisable to consider marking periods as appropriate time intervals.

The topic approach to compacting uses the topic, instructional unit, or co-ordinate set of basic skill objectives as guides for determining a compacting period. This approach is probably more realistic for gifted students because of the difficulties involved in fitting particular units of study into predetermined time periods. Regardless of which approach is used, however, it is important to monitor a student regularly and to insure that the child is maintaining a high level of proficiency in areas that may be measured on achievement tests or may be basic to curricula at later grade levels.

Procedures for compacting basic material

The two essential requirements for successful compacting are (1) careful diagnosis and (2) a thorough knowledge of the content and objectives of a unit of instruction. Once these requirements have been met, the actual procedures for carrying out the process are quite simple.

Diagnostic instruments in the basic skill areas (reading, language skills, and mathematics) are usually readily available in the form of pretests, end-of-unit tests, or summary exercises that contain a sampling of the major concepts presented in a designated unit of instruction. In the *Pathfinder Reading Program* (published by Allyn & Bacon, 1978), for example, the teacher is provided with several valuable diagnostic tools. A placement inventory, which is included in each teacher's guidebook, is designed to assess silent reading comprehension, listening comprehension, and oral reading. The material is graded for readability, and specific instructions are provided for determining each child's level in the three areas mentioned above. The inventory also provides information about a student's comprehension ability and yields data regarding specific problems that might exist in the area of word-attack skills. The instrument is available in a group-administration form, and guidelines for interpreting scores are included. A pre-reading placement test for Kindergarten and first grade children provides information for placement at the early levels of the program.

A second valuable tool for diagnosis in the *Pathfinder* series is the unit pretests. These instruments are correlated with specific objectives listed at the beginning of each unit and in the lessons in which the

objectives will be pursued. The objectives and pretests are also keyed with the criterion referenced tests, which are a part of the total system. As might be expected, all of the instructional materials are co-ordinated with the objectives and assessment instruments, and certain teaching activities that are especially suited for evaluation are flagged throughout the program. The system also includes test record sheets, skill checklists, and unit cross-references that point out specific activities related to each test skill.

Most of the recently published reading, mathematics, and language arts programs have been developed in a manner similar to the *Pathfinder* management system. Although materials in other curricular areas such as science and social studies are not as rigidly sequenced as basic skill activities, there is nevertheless a general movement toward curriculum 'management by objectives', and this approach will greatly facilitate both the diagnostic and compacting processes. In cases where such tests or diagnostic instruments are not readily available, teachers should review the main objectives of a specific unit and construct an instrument that samples specific competencies related to each objective. Such instruments can usually be prepared by checking the behavioural objectives listed in curriculum guides or teachers' manuals and doing a 'cut-and-paste' job with related workbook or textbook exercise items.¹

Perhaps the best way to illustrate how the compactor can be used is to present a few specific examples.

Example 1

Brenda is a third-grade student who has scored 2 years above grade level on the reading and language arts section of a standardized achievement test. She is an avid reader and has already read several books in the Nancy Drew and Hardy Boys mystery series. Brenda's reading group has recently completed unit 1 in the *Pathfinder* series and is about to embark upon unit 2. Brenda's score on the unit 1 criterion reference test was 100 percent, and she completed all workbook exercises without making a single error. Although she enjoys reading on her own, she has not shown a great deal of interest in the stories included in the reading book and, in fact, has told her teacher that she is bored with most of the stories and reading group activities.

Prior to beginning the second unit, Brenda's teacher administered the unit pretest. This instrument assesses the basic skill objectives covered in the unit. The following general areas are covered: decoding, comprehension, language usage, vocabulary, and research and study skills. The fourteen specific objectives related to these general areas are listed in the teacher's edition of the reading text. Fig 2 shows the entry that Brenda's teacher made in the first column of the compactor.

The information in figure 2 represents the material to be covered in unit 2 and the evidence that suggests a need for compacting. Since it would be a relatively useless task to rewrite the objectives on the form, the teacher has simply referred to the specific pages in the teacher's edition where these objectives are outlined. It is important to point out, however, that the degree of specificity that may be required will vary from district to district. For this reason, it may sometimes be necessary to actually list the objectives on the form. If this type of detail is required, an alternative to the burdensome

CURRICULUM AREAS TO BE CONSIDERED FOR COMPACTING Provide a brief description of basic material to be covered during this marking period and the assessment information or evidence that suggests the need for compacting.

Unit 2, Level 14 -- *Hand Stands*. Objectives -- see p. 64 in *Teacher's Edition* (attached). All items on Pretest (attached) correct with exception of questions dealing with grapheme-phoneme correspondence.

FIG. 2.—Curriculum areas to be considered for compacting.

paperwork of copying objectives by hand is simply to make a photocopy of the page in question and attach it to the compactor. This approach will save time and will also enable the teacher to use the page as a checklist when going over the form with parents or other teachers. In order for this individualization system to have practical value in the classroom, every effort should be made to keep paperwork to an absolute minimum.

Although Brenda has demonstrated almost perfect mastery of the skills in unit 2, we note in figure 2 that she has experienced some difficulty in the general area of decoding (phonetic analysis related to grapheme-phoneme correspondence). Assuming that the pretest errors represent an actual deficiency (rather than a careless error on Brenda's part), the teacher selects some training activities and procedures for checking on subsequent mastery. The teacher's entry for the second column on the compactor (see fig. 3) consists of a brief notation of her plan.

There are numerous other activities dealing with grapheme-phoneme correspondences through the *Pathfinder* materials, and the teacher can quickly locate and use these exercises if he/she feels that further reteaching is necessary. If additional exercises and checkup procedures are used, they should be added to the second column. Since the purpose of this column is to show evidence of mastery in basic skill areas, completed worksheets and criterion reference tests should be attached to the form.

According to the procedures described above, Brenda has successfully mastered a particular unit of study and we can now plan some enrichment and acceleration activities that she will pursue during the extra time she has earned. At this point it is especially crucial to make decisions about individualized programming (the third column of the compactor) by taking a closer look at the child's interests and learning styles. We know that Brenda likes mystery stories and we also know that she prefers independent reading activities rather than working in a reading group. Figure 4 shows two specific activities that were planned for Brenda on an individual basis.

Example 2

Bill, a sixth-grade student, has just moved into a new school system in October. His records show that he is a straight A student in math. His achievement test scores in math are in the ninety-ninth percentile (see fig. 5). Bill's teacher is using *Elementary School Mathematics — Book 6* (Eicholz and O'Daffer 1968). After 2 days in math class, Bill explains to the teacher that he knows how to

PROCEDURES FOR COMPACTING BASIC MATERIAL Describe activities that will be used to guarantee proficiency in basic curricular areas.

Do pg 23 in *Workbook and Skill Reinforcement Master No. 6*. Check proficiency by using activity No. 3, pg. 76 in *Teacher's Edition* and *Criterion Reference Test* items dealing with decoding (*Workbook* pg. 133, Nos 1-4).

FIG. 3.—Procedures for compacting basic material

ACCELERATION AND / OR ENRICHMENT ACTIVITIES Describe activities that will be used to provide advanced level learning experiences in each area of the regular curriculum.

1. Guided independent reading; ask librarian to meet with Brenda for ½ hour per week; help her to obtain mystery stories from high school and city library; help her draw up a summer reading plan.
2. Work with gifted program resource teacher on creative writing of mystery stories. Work with art teacher and other students to produce puppet dramatizations of her mystery stories.

FIG. 4.—Acceleration and/or enrichment activities

CURRICULUM AREAS TO BE CONSIDERED FOR COMPACTING Provide a brief description of basic material to be covered during this marking period and the assessment information or evidence that suggests the need for compacting.

Chapter 3 - *Elementary School Math Book 6* (Addison Wesley). Objectives: see page T39a in *Teacher's Edition*. Student has straight A average in math during the past 5 years. He has scored in the 99th percentile in achievement tests for the past three years.

FIG. 5.—Curriculum areas to be considered for compacting.

do the math. He describes his interest in working on logic problems, and shows his teacher the beginning of a logic book that he is putting together for other students.

Bill's teacher administers the chapter test for units 1-3 on pages 78 and 79 of the text. This will assess the basic skills to be covered in the unit. Bill scores 100 percent. This information is entered on the compactor in figure 6. His teacher has 'bought' him some time to work on logic problems by demonstrating that he has mastered the basic skills for this unit.

Since Bill has already expressed an interest in a particular area of enrichment related to mathematics, we note the teacher's entry in the third column of the compactor in figure 7.

Designing acceleration and enrichment activities

The final step in curriculum compacting is to explore a wide variety of acceleration and/or enrichment alternatives. If teachers have been successful in helping gifted youngsters master the regular curriculum in a more economical and efficient manner, then they will have provided some time for these students to pursue advanced-level studies. Teachers will also have concrete evidence (test scores) that basic material has been mastered.

The third column of the compactor can be used to expand the written record of individualization. The first step in completing this column is to make some basic

PROCEDURES FOR COMPACTING BASIC MATERIAL Describe activities that will be used to guarantee proficiency in basic curricular areas.

pgs 78-79 - Administered chapter review to 37% of class. All items were completed correctly.

Fig. 6.—Procedures for compacting basic material

decisions about the subject matter 'bought' which enrichment activities will fall. several mathematics curriculum units compacted, a teacher must decide whether extra time available will be devoted to acceleration. The philosophy of a program, ability of resources, or practical considerations scheduling restrictions may influence placement of certain restrictions or limits on alternatives, the crucial consideration in planning about advanced-level opportunities in the student. In the situation described, there should be no question whatsoever as to the mathematics experience if the student is interested in math. However, a problem student is taught advanced math when rather pursue some other topic or area.

A word of caution should be mentioned. It is a common practice in our culture to reward for superior performance. Teachers who give stars for good work and parents who give children money for good grades practices obviously reinforce good behavior. They may also lead children to believe that they perform well are their favourite. In fact be the case, but teachers should be aware that a child is interested in a particular area of study, she happens to perform at a high level, and it is important for teachers to use information about interests and learning styles when planning about completing the third column of the compactor. Taking students' interests into consideration, teachers to devote some time to exploration. A student may very well be interested in a particular area of study, but be based on limited exposure to the subject, areas that may actually have been received straight A's. One of the best ways to facilitate the compactor's third column is to provide available enrichment and acceleration within the given school district. This list may be expanded, however, as resources and gifted students expand the planning and process. The following list has five major organizational topics that can be listed by compacting practices can be listed by compacting from among the five major topics.

PROCEDURES FOR COMPACTING BASIC MATERIAL
Describe activities that will be used to guarantee proficiency in basic curricular areas.
<i>pp 78-79 - Administered chapter review to student. All items were completed correctly.</i>

FIG. 6.—Procedures for compacting basic material

ACCELERATION AND/OR ENRICHMENT ACTIVITIES
Describe activities that will be used to provide advanced level learning experiences in each area of the regular curriculum.
<ol style="list-style-type: none"> 1. Meet with persons from computer center at Manchester Community College. Develop logic problems guidebook for hand calculators and micro-computers. 2. Teach course (using his guidebook) during spring mini-course week. 3. Develop display boards (with aid of other students) and enter his work in regional science and math fair.

FIG. 7.—Acceleration and/or enrichment activities

decisions about the subject matter 'boundaries' within which enrichment activities will fall. For example, if several mathematics curriculum units have been compacted, a teacher must decide whether or not the extra time available will be devoted to enrichment or acceleration. The philosophy of a program, the availability of resources, or practical considerations such as scheduling restrictions may influence this decision.

Although practical and organisational concerns may place certain restrictions or limits on enrichment alternatives, the crucial consideration in making decisions about advanced-level opportunities is the interests of the student. In the situation described above there should be no question whatsoever about an advanced mathematics experience if the student is genuinely interested in math. However, a problem may arise if a student is taught advanced math when he or she would rather pursue some other topic or area of study.

A word of caution should be mentioned at this point. It is a common practice in our culture to reward persons for superior performance. Teachers give A's and gold stars for good work and parents sometimes give their children money for good grades. Although such practices obviously reinforce good study habits, they may also lead children to believe that the areas in which they perform well are their favourite subjects. This may in fact be the case, but teachers should not assume that a child is interested in a particular area because he or she happens to perform at a high level. It is extremely important for teachers to use information about student interests and learning styles when they make decisions about completing the third column of the compactor.

Taking students' interests into consideration requires teachers to devote some time to the area of interest exploration. A student may very well think that he or she likes a particular area of study, but this conclusion may be based on limited exposure to other areas of knowledge, areas that may actually hold far more fascination for the child than the area(s) in which he or she has received straight A's.

One of the best ways to facilitate the completion of the compactor's third column is to develop a list of all available enrichment and acceleration activities within a given school district. This list may be modest to begin with; however, as resources and special services to gifted students expand, the list can serve as an important part of the planning and program-development process. The following list has been developed around five major organisational topics. Although each topic has a general characteristic, several additional program practices can be listed by combining various elements from among the five major topics.

Major programming practices for the gifted and talented

1. Enrichment in the regular classroom: independent study, small-group investigations, accelerated coverage of the regular curriculum, minicourses, special interest groups, clubs, interest-development centers, and special lessons that emphasize the development of cognitive and affective processes.

2. Resource room, full- and part-time special class (same activities as above): this cluster also includes itinerant teachers who serve as resource persons or special teachers to groups of gifted students.

3. Acceleration: grade skipping, honours and advanced-placement courses, college courses, summer or evening courses, early admission to Kindergarten or first grade, and special seminars.

4. 'Off-campus' experiences: internships; apprenticeships; mentorships; work-study programs; and participation in community programs such as theatrical groups, symphonies, artists' workshops, and museum programs.

5. District-wide, school-wide, or departmental programs: the above, plus independent study programs, correspondence courses, special counselling programs, career education programs, and library-based programs.

The numerous areas of overlap between the organizational patterns of special programs and the instructional methods that can be used within several of the patterns make it difficult to prepare a classification scheme that is mutually exclusive. In the above activities, for example, an honours course teacher, an independent study co-ordinator, a regular classroom teacher, or a resource room teacher might all use the same technique when guiding a student through an independent study project or research paper. Community resources might be used in any and all of the above activities, and popular practices such as group brainstorming or units of study on futuristics could fit into almost every major topic area. This is an important point to keep in mind when completing the third column of the compactor.

In some cases it may be sufficient merely to report the name of an advanced course into which a youngster has been placed. If the course covers a fairly well-specified and generally uniform body of knowledge (e.g. calculus 1; introduction to psychology), and if no special arrangements are made within the course to accommodate the needs of any particular learner, then the course title and institution or person offering the course might suffice for information in the third column of the compactor. It is a good idea, however, to attach outlines, reading lists, laboratory exercises, or any other

information that will provide documentation about the nature of the special programming efforts.

The development of a comprehensive and detailed guidebook for implementing the various program alternatives listed above is beyond the scope of this article. The list of major programming areas will, however, give some idea about the types of alternatives that might be used to complete the third column of the compactor. As teachers review this list, they should keep in mind factors that will influence decision making, such as availability of resources, the age and maturity of individual students, and the degree of structure that is implicit in various approaches to programming. Teachers should remember that there is no such thing as a 'pure' programming practice. For example, a particular minicourse might be highly structured and 'lockstep' in design. On the other hand, another minicourse or the same course taught by a different instructor may be conducted in an entirely different manner. For this reason it is important for the advisor (1) to have a fairly thorough knowledge about the objectives, content, and activities involved in a particular alternative, and (2) to have some degree of familiarity with the teaching styles of the persons under whose direction the student will work.

A final consideration that should be taken into account when completing the third column of the compactor is related to the degree of structure that students generally prefer when pursuing various types of learning activities. Information about such preferences can be obtained by reviewing scores derived from an instrument entitled the Learning Styles Inventory (LSI) (Renzulli and Smith 1978). The LSI yields individual student data about preferences for learning under nine types of instructional techniques. Some of these scores reflect a preference for relatively structured learning activities (e.g., lecture, programmed instruction, drill and recitation), others imply a greater need for interactive experiences (e.g., simulation, discussion, peer teaching, teacher games), and still others suggest that some students may prefer an unstructured learning environment (e.g., projects, independent study). There is, of course, some overlap in individual students' preferences. For example, a child may prefer to be taught by another student in a recitation or drill fashion. Furthermore, a subject matter/learning style interaction often exists, and some students might prefer a structured approach to sequential subjects such as math, but a more interactive and/or unstructured method in areas such as literature or social studies.

Any child (regardless of test scores) who can cover regular curriculum material in a more compact and streamlined fashion should be given the opportunity to do so, provided, of course, that acceleration does not cause undue stress or emotional problems for the child

Summary and conclusion

Curriculum compacting should be a basic component of any program designed to meet the special learning needs of gifted students. If carried out conscientiously, it will relieve gifted students of the boredom that often results from unchallenging work in basic skill areas and at the same time will guarantee to students, their parents, and subsequent grade-level teachers that the children have mastered standard competencies necessary for later achievement. An equally important purpose of compacting is that it provides a legitimate procedure for allowing an advanced student time for advanced work and participation in special programs or activities.

Compacting can also provide the time within a classroom for students to pursue acceleration and enrichment activities. If a resource room program for the gifted exists in a district, any study or investigation started in the resource room may be extended into the classroom in the hours made available by curriculum compacting. This procedure has the added benefit of leading to a closer working relationship between the resource room teacher and the regular classroom teacher. If the classroom teacher is informed of studies started in the resource room and understands the need for additional hours to be spent on such study, the important role that compacting plays in the regular classroom is all the more evident.

Note

1. *The perceptive reader may ask why we are not recommending the subtests of general achievement batteries as diagnostic instruments. Although these instruments do sample a wide range of basic skills, our purpose in compacting is to focus on competencies related to particular units of instruction. The subtests of general batteries are useful in pointing out which students should be considered for compacting; these tests, however, are usually too general in scope to have diagnostic value.*

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