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Academies of Inquiry and Talent Development at the Middle and High School Levels¹

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The real difficulty in changing the course of any enterprise lies not in developing new ideas but in escaping old ones.

John Maynard Keynes

Abstract

This article summarizes research on various aspects of the Schoolwide Enrichment Triad Model and research on eight categorical components of the model carried out over the past 20 years will be presented. These components include: the effectiveness of the model, creative productivity, personal and social development, unhabits, and perhaps most important, love of learning and desire to continue to pursue creative productive work in the future.

Part I: Rationale and Objectives

This section will provide a brief rationale and the objectives for alternatives to traditional accelerated courses that are a popular approach for serving middle and high school gifted students. Numerous changes are taking place in education systems around the world as schools seek ways to improve student performance in a highly competitive global economy. The idea for Academies of Inquiry and Talent Development (AITD) grew out of research and development dealing with a highly successful component of the Schoolwide Enrichment Model (SEM) called enrichment clusters (Reis, Gentry, & Park, 1995; Renzulli, 1994; Renzulli & Reis, 1997). Enrichment clusters are multi-grade groups of students and adults with common interests who come together on a regular basis to pursue the development of products or services using the methodologies of practicing professionals. No predetermined lesson or unit plans are used, and even the products and services are decided upon collaboratively by the respective groups and subgroups within a given cluster (Renzulli, 1997). In this regard, what takes place within an enrichment cluster is more analogous to the workings of a real world environment

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such as a film studio, research laboratory, publishing company, or historical society rather than what typically takes place in a traditional classroom. All learning takes place within the context of developing authentic products or services for real world audiences. Divisions of labor are encouraged to ensure that maximum respect is given to each student's interests, learning styles, and preferred modes of expression. This type of learning is what John Dewey called collateral learning, and what is popularly referred to today as constructivist learning theory.

Although enrichment clusters in elementary schools are usually planned on a semester or annual basis, our experience with middle and high school students has shown that they frequently express an eagerness to remain together for additional, and usually more challenging involvement in their respective areas of interest. Strong associations develop between and among both students and adults, due to their commonality of interest and the collaborative approach to product or service development that is the hallmark of the cluster concept. It is for this reason that we have developed this plan to keep the same group of students and adults together during designated time blocks for the duration of their middle or high school years. There will, obviously be times when individual student interests change, and accordingly, changes in student placement should occur. Similarly adults may also want to "try something new" after a given number of years within an AITD, and that opportunity should also be provided.

There are separate but equally compelling rationales for the middle and high school applications of SEM. Although these rationales arise from different forces that are currently affecting middle school and high school curriculum, a common goal at both levels is the need to provide an organized and systematic set of high level learning opportunities that are specifically directed toward the enhancement of creative productivity. Our work does not argue against the traditional focus on advanced level knowledge acquisition that is popular in middle and high school courses for gifted students; however, we do argue that there must be a balance between the traditional goals of accelerated learning and the kinds of investigative and creative involvement that represent the hallmarks of persons who have been recognized as gifted contributors to the arts, sciences, and all other areas of human productivity (Renzulli, 1978).

Middle School Rationale

Middle school educators are committed to providing a challenging and enjoyable academic experience while, at the same time, maintaining strong support for the social and personal goals of middle level education set forth by the National Middle School Association (NMSA, 1982) and other documents that have laid the foundation for middle school programming (Carnegie Council on Adolescent Development, 1989). The plan described in this article is designed to achieve this twofold purpose; and also to provide a vehicle for sustained and meaningful relationships among middle school students with common interests and with adults who share the same general areas of interest. In addition to the academic and social/personal outcomes, this plan enables each student to develop a close, meaningful multi-year relationship with one teacher, or a small group

of teachers. Sustained relationships with adults is one of the goals of most middle school advisor / advisee (A/A) programs. Although this plan is not intended to replace present efforts directed toward helping middle school students understand and value self, others, and life experiences, many of these goals of A/A programs can be accomplished within this plan as a result of the common bonds that develop between people when they share common interests. In this regard, the plan seeks to promote communities of learning and mutual support that are not unlike the relationships that develop over multi-year periods between students and athletic coaches, band and chorus directors, or club advisors.

Middle schools have recently come under fire because of a “softness” in the curriculum, and this concern forms part of the rationale for the use of AITDs at the middle school level. The growing lack-of-challenge criticism directed at middle schools has not yet reached epidemic proportions, but professional publications and the popular press are already beginning to raise questions that we need to take seriously. A recent article in a major education newspaper (Bradley, 1998) entitled “Muddle in the Middle” extols readers to consider how middle schools are “supplanting academic rigor with a focus on students’ social, emotional, and physical needs” (p. 38). An earlier article in the same publication entitled “A Crack in the Middle” (Killion & Hirsh, 1998) reports that “recent national and international student test results [for the middle grades] reveal the depth of academic problems and the decline between 4th and 8th grade” (p. 44). Unless we are creative and proactive in the ways in which we respond to these criticisms, external forces effecting middle schools will undoubtedly put pressure on them to substitute our concerns about a conceptually challenging and enjoyable learning environment with simplistic solutions such as hosing students down with vast amounts of factual material in the hope that it will improve test scores.

The AITD plan also respects the strong emphasis that middle schools place on teaming. In this case, however, teams of adults and students are organized across grade levels according to common areas of student and teacher interests. The teams can also involve other adults in the community who have specialized areas of interest and expertise. Once again, this approach is not intended to disrupt traditional grade level teams. Rather, it creates another kind of interest-based team that resembles the ways in which people organize themselves in real world problem solving situations.

The High School Rationale

Major changes are taking place in high schools around the world as a result of increased international comparisons of student achievement, increased pressure for more students to pursue postsecondary education, unprecedented competition among the most gifted students to enter highly competitive colleges, and the overall effects that a global, knowledge-based economy is having on education systems. Policy makers have responded to these pressures by instituting standards-based “reform” models and a proliferation of high stakes testing programs to assess the effectiveness of their reform initiatives. The very predictable result of standards and test driven approaches to school improvement has been an emphasis on those things that are most easily accessed through standardized tests. Large amounts of school time are devoted to

knowledge acquisition for test preparation, and even honors and Advanced Placement (AP) courses, once the mainstay of challenge for gifted high school students, have become places where practice tests, vocabulary lists, and memorization of facts are the most prevalent way to ensure that students will do well on AP exams and other required tests. Many of the strategies that prepare students for these tests contradict everything we know about engaging instruction that makes material relevant and inspires young people who want to delve deeper into topics so that they can develop the high level cognitive and interpersonal skills necessary for advanced inquiry. Our most able high school students say that school is boring and they are rarely afforded opportunities to *apply* their knowledge in interesting and challenging situations. Steinberg, Bradford Brown, & Dornbusch (1996) found that approximately 40 percent of high school students said they were "... just going through the motions in school." He found that one-third of all students surveyed said that they got through the school day by just "goofing off" and not paying attention or putting forth their greatest effort in class. And Pope (2001) described how the pressures to earn high grades have caused our most able high school students to compromise their values in order to manipulate the system, sometimes resorting to scheming, lying, and cheating. These concerns raise critical questions about what high schools should be doing to create an environment that cultivates intellectual curiosity, creativity, commitment to important issues, and a sense of power to change things—all things that must become important goals of gifted education.

The underlying rationale for middle and high school programs of the type described in the sections that follow does not diminish the importance of accelerated learning, but rather enhances the pursuit of advanced knowledge through opportunities to apply content and process skills to self-selected problems that are real and meaningful to students. This kind of application cannot be easily achieved in classrooms where covering content is dominant. The AITDs offer a time and a place and a brand of learning where first-hand investigative activity and true inquiry are the major focus of students' work. In the sections that follow a discussion of the objectives and procedures for organizing an AITD program at middle and high school levels will be described.

The Objectives of Academies of Inquiry and Talent Development

The objectives of AITDs are based on two fundamental concepts around which all learning activities within the academies are organized. These concepts are authentic learning and real-life problems. Because these concepts are inherently linked it is difficult to define one without the other.

Authentic Learning and Real-Life Problems Defined

Authentic learning consists of *applying* relevant knowledge, thinking skills, and interpersonal skills to the solution of real problems. Real-life problems share four criteria. First, a real problem requires a personal frame of reference for the individual or group pursuing the problem. In other words, the problem must involve an emotional or internal commitment in addition to a cognitive or scholarly interest. For example, stating

that global warming or urban crime are “real problems” does not make them real for an individual or group unless they decide to do something to address the problem.

A second characteristic of real problems is that they do not have existing or unique solutions for persons addressing the problem. If an agreed-upon solution or prescribed strategies for solving the problem exist, then it is more appropriately classified as a “training exercise.” Even simulations based on approximations of real-world events are considered training exercises if their main purpose is to teach predetermined content, thinking skills, or problem solving strategies.

The third characteristic of a real problem is best described in terms of why people pursue these problems. The main reason is they want to create new products or services that will change levels of understanding, appreciations, actions, attitudes, or beliefs on the part of a targeted audience. For example, a group of young people who gathered, analyzed, and reported on data about television-watching habits in their community were contributing information that was new, at least in a relative way, and that would cause people to think critically about the television-viewing actions of young people. In the realm of service oriented activities, several motivated and mathematically advanced girls organized a group at their high school called the Female Mathematics Support Team. They provided mentoring services and emotional support to other girls who were struggling with general math and the transition to algebra.

The final characteristic of real problems is that they are directed toward a real audience. Real audiences consist of persons who voluntarily attend to information, events, services, or objects. A good way to understand the difference between a real and a contrived audience is to reflect on what one group of students did with the results of their local oral history project. Although they presented their findings to classmates, they did so mainly to rehearse presentation skills. Their authentic audience consisted of members of a local historical society and persons who chose to read about their research in the features section of a local newspaper.

To understand the essence of authentic learning is to compare how learning takes place in a traditional classroom with how someone might learn new material or skills in real-world situations. Classrooms are characterized by relatively fixed-time schedules, segmented subjects or topics, predetermined information and activities, tests and grades to determine progress, and an organizational pattern largely driven by the need to acquire and assimilate information and skills imposed from outside the classroom. Contrast this type of learning with the more natural chain of events that takes place in real-world situations including research laboratories, business offices, or film studios. In these situations, the goal is to produce a product or service. All resources, information, schedules, and events are directed toward this goal, and evaluation (rather than grading) is a function of the quality of the product or service as viewed through the eyes of a client or consumer. Looking up new information, conducting experiments, analyzing results, or preparing a report is focused primarily on present action rather than storing it for possible future use.

Interestingly enough, material learned through authentic pursuits has the greatest amount of transfer value so far as future use is concerned. When content and processes are learned in authentic, contextual situations, they result in more meaningful uses of information and problem-solving strategies than the learning that takes place in overly structured, prescribed classroom situations. If persons involved in authentic learning experiences are given some choice of the domains and activities in which they are engaged, and if present experience is directed toward realistic, personalized goals, this type of learning creates its own relevancy and meaningfulness.

Authentic learning, which is at the center of AITDs, consists of investigative activities and the development of creative products in which students assume roles as first-hand investigators, writers, artists, or other types of practicing professionals. Although students pursue these kinds of involvement at a more junior level than adult professionals, the overriding purpose is to create situations in which young people are thinking, feeling, and doing what practicing professionals do in the delivery of products and services. These experiences should be viewed as vehicles through which the following five objectives of AITDs can be achieved:

- To provide students with opportunities, resources, and encouragement to apply their interests, knowledge, thinking skills, creative ideas, and task commitment to self-selected problems or areas of study;
- To acquire advanced-level understanding of the knowledge and methodology used within particular disciplines, artistic areas of expression, and interdisciplinary studies;
- To develop authentic products or services that are directed primarily toward bringing about a desired impact on one or more specified audiences;
- To develop self-directed learning skills in the areas of planning, problem finding and focusing, organizational skills, resource utilization, time management, cooperativeness, decision making, and self-evaluation; and
- To develop task commitment, self-confidence, feelings of creative accomplishment, and the ability to interact effectively with other students and adults who share common goals and interests.

Authentic learning should be viewed as the vehicle through which everything, from basic skills to advanced content and processes, “comes together” in the form of student-developed products and services. In much the same way that all the separate but interrelated parts of an automobile come together at an assembly plant, so, also, do we consider this form of learning *as the assembly plant of the mind*. This kind of learning represents a synthesis and an application of content, process, and personal involvement. The student’s role is transformed from one of lesson-learner to first-hand inquirer, and the role of the teacher changes from an instructor and disseminator of knowledge to a combination of coach, resource procurer, mentor, and, at times, a partner or colleague. Although products play an important role in creating authentic learning situations, a major concern is the development and application of a wide range of cognitive, affective, and motivational processes.

In many ways our view of authentic learning compliments the guidelines Beane (1993) proposes for middle school curriculum. He states one guideline as follows: “The central purpose of the middle school curriculum should be helping early adolescents explore self and social meanings at this time in their lives” (p. 18). *We believe that self-selected, authentic investigations create an important “space” for middle and high school students to find points of personal engagement.* Beane also states that “the middle school curriculum should be firmly grounded in democracy” (p. 19). He believes that democratic curriculum can only be conceived when all people, both adults and students, collaborate to determine the curriculum. Like Beane, we firmly believe that authentic, investigative experiences, mutually determined by students and teachers, will provide the most powerful and meaningful learning experiences.

How Are Academies of Inquiry and Talent Development Organized?

Student and Teacher Interest Assessment

Prior to or upon entrance into middle or high school AITDs, all students are assessed for their major strengths and interest areas. Using a data gathering format called the Total Talent Portfolio (Purcell & Renzulli, 1998), this assessment process compiles strength area information about previous successful to exemplary performance in academic subjects, extra-curricular pursuits, and collected works that reflect high levels of interest and creativity. The portfolio also includes responses to interest assessment instruments, learning and expression styles assessments, and various goal setting statements. Teachers simultaneously complete an adult interest assessment questionnaire such as *Inspiration, Targeting My Ideal Teaching and Learning Situation* (Gentry & Renzulli, 1995) and use the results to explore the AITD in which they might like to participate so far as their role in this enrichment program is concerned. Teachers are encouraged to consider special areas of interest outside of their major teaching assignment as well as special topical interests within the subjects they regularly teach (Reis, Gentry, & Park, 1995).

The results of student assessment lead to “enrollment” in one of the following Academies of Inquiry and Talent Development; and the results of teacher interest assessment lead to joining the “faculty” of one of these academies:

- The Academy of Literature, Language Arts, and The Humanities
- The Academy of Applied Mathematics
- The Academy of Social Sciences
- The Academy of Fine and Performing Arts
- The Academy of Physical and Life Sciences
- The Academy of Sport and Leisure Studies
- The Academy of Computer Science and Technology.

Other academies may also be formed as a result of specialized interests, and academies can also be combined (e.g., science and computers/technology) or subdivided into specialized areas within a general area of knowledge (e.g., Physical Sciences, Biological Sciences, Environmental Studies). Typically, however, these

subdivisions will take place through the variety of enrichment clusters formed within each of the general academies.

What Takes Place in An Academy of Inquiry and Talent Development?

All activity within the AITDs is directed toward the acquisition and application of advanced levels of knowledge and investigative methodology within the respective fields of study subsumed under each academy. The theory of learning that guides inquiry in this plan is called the Enrichment Triad Model (Renzulli, 1977). This model consists of three *interrelated* types of enrichment that are focused toward the development of interests, the skills of inquiry, and the production of creative and authentic products. Ideally, involvement in the first two types of enrichment should lead to problem finding and focusing that will become the focal point of the third type of enrichment.

Type I Enrichment: General Exploratory Experiences

Type I Enrichment consists of experiences and activities that are purposefully designed to expose students to a wide variety of disciplines, topics, occupations, issues, hobbies, persons, places, and events that are not normally covered in the regular curriculum. A major objective of this type of enrichment is to stimulate new interests that may lead to more intensive follow-up on the parts of individuals or small groups. Type Is are typically carried out by exposure to visiting speakers, the use of visual and print media or interest development centers, attendance at performances or demonstrations, or visitations to places where persons are engaged in scientific, artistic, or other kinds of professional activities. Through a series of recommended debriefing, discussion, and brainstorming activities, students examine each experience to see if they would like to learn more about the topic, and perhaps initiate an investigative or creative endeavor within the topic area. Thus, for example, a subgroup of students who attended a large group presentation on environmental engineering in the Academy of Physical and Life Sciences decided that they would like to learn more about how park landscapes and pathway designs are developed. They formed an enrichment cluster on landscape architecture; and with the help of one of their teachers, a local landscape architect who recommended books, materials, and information obtained from the Internet, they developed several designs for schools, parks, and public buildings in their city. This example shows the progression from Type I (the speaker on environmental engineering), to Type II (studying the methodology of landscape architecture), to Type III (actually applying authentic methods of inquiry to develop their own designs). One of the designs for a school playground was approved by their local board of education for actual construction.

Type II Enrichment: Group Training Activities

Type II Enrichment activities are designed to develop: (1) general thinking skills, (2) affective processes related to better understanding of self and others, (3) learning-how-to-learn skills, (5) methodological (i.e., research and reference) skills, and (4) skills designed to enhance various modes of communication. Type II Enrichment is typically

carried out through planned lessons that focus on one or more of the five skill areas mentioned in the previous sentence. In some cases, the topics for these lessons cannot be selected in advance because the interests might emerge (as in the above example) from a Type I experience. Although all of the skill areas mentioned above are important, numbers 4 and 5 are especially relevant to the goals of the AITD. In order for young people to carry out authentic investigations, it is necessary for them to understand and apply the methods of inquiry in a particular field, and to communicate effectively the findings of their research or the products resulting from their creative endeavors. All fields of knowledge have a fairly substantial subset of books and materials that focus on the methodology or How-To knowledge of the field. For example, a book entitled *A Student's Guide to Conducting Social Science Research* (Bunker, Pearlson, & Schultz, 1999) is a wonderful resources for students who are interested in pursuing a research project. *Research Comes Alive: Guidebook for Conducting Original Research for Middle and High School Students* (Schack & Starko, 1998) is another example of a reference book that addresses the methodological skills. These materials can serve as excellent resources for Type II training; however, it is important to keep in mind that this type of learning should be viewed as preparation for investigative (Type III) activities rather than as an end in and of itself.

Types I and II Enrichment Applied to AITD

Within the AITD, Types I and II Enrichment are designed to play a very special role. This role is to help students find and focus problems that will lead to Type III Enrichment, either in the formation of group investigation teams called enrichment clusters, or individual projects of a creative or investigative nature carried out by a single person. Accordingly, all Type I and II activities should be geared toward answering the following critical questions:

1. What do people with an interest in this area (e.g., environmental engineering) do?
2. What products do they create and/or what services do they provide?
3. What methods do they use to carry out their work?
4. What resources and materials are needed to produce high quality products and services?
5. How, and with whom, do they communicate the results of their work?
6. What steps need to be taken to have an impact on intended audiences?

Type I Enrichment can be carried out in a large group setting for all students within an AITD, or it can take place within smaller groups that have already expressed an interest in a particular topic or subdivision of knowledge included in a general field. For example, a Type I in cartoon art would be more meaningful for students interested in the visual arts, whereas a Type I in mime or set design might be more appropriate for students with an interest in the dramatic arts. Since one of the goals of this model is to provide opportunities for students to “reach out” in new directions and to develop new interests, all Type Is should be widely advertised and open to all students within the AITD who want to attend.

Whereas both Types I and II Enrichment focus on the first two critical questions listed above, questions 3 through 6 are more relevant to persons who have already made a decision to pursue a topic or area of study at greater depth. Accordingly, most Type II Enrichment activities take place in smaller groups (i.e., enrichment clusters) after students have focused on a particular area in which they would like to carry out investigative work. For example, a group of students with a general interest in the social sciences developed a more specific concern about the attitudes of students and parents toward the adoption of a school uniforms policy that was being considered by several communities in their region of the state. They formed an enrichment cluster called “The Attitude Data Detectives;” and with resources provided by their teacher, and information obtained from the Internet, they learned the skills necessary for designing a very professional questionnaire and survey instrument. Additional methodological skills included how to tabulate and statistically analyze data, and how to report findings in written, oral, and graphic formats. Examples of how Type I and Type II Enrichment in the areas of social studies and literature and the humanities are planned around the six questions listed above are discussed in a later section of this article.

Type III Enrichment: Individual and Small Group Investigations of Real Problems

The real “pay off” in terms of high-level learning in the Enrichment Triad Model is Type III Enrichment. This type of enrichment includes investigative activities, creative productions, and artistic performances in which the learner assumes the role of a firsthand inquirer—*the student thinking, feeling, and doing like the practicing professional*, even if the work is at a more junior level than that pursued by adult scientists, writers, and other professionals. Type III Enrichment is typically carried out by providing students with opportunities, resources, and encouragement to apply their interests, knowledge, creative ideas, and task commitment to a self-selected problem or area of study. By developing authentic products that are intended to have an impact on selected target audiences, students acquire, in a natural and relevant way, advanced levels of knowledge and investigative methodology in their areas of interest. They also learn how to develop self-directed learning skills, organizational skills, the appropriate use of advanced level reference materials, and time management skills. In group Type III Enrichment situations, students also learn how to interact as an effective member of a team, how to work cooperatively with others, and how to participate in activities where success is based on divisions of labor and mutual interdependence.

At the middle and high school levels, individual students or small groups who share a common interest carry out Type III investigations under the guidance and supervision of one or more members of the academies’ faculty. Most Type III investigations begin when students within an academy (e.g., The Academy of Fine and Performing Arts) focus in on a particular area (e.g., film making). The transition from a general area of interest to a specific problem that requires investigative methodology is, once again, dependent on applying the methods used by professionals to find and focus a problem. Guidance by professionals and the use of How-To books can help students learn how to explore various types of film opportunities and gain the procedural know-how necessary to focus their area of interest and begin work. The how-to books are also excellent for Type II skills that can help students develop testable hypotheses,

raise research questions, and learn how data are gathered, analyzed, and reported in particular disciplines. These books can be used for Type II lessons or mini-courses for members of an entire academy or various subgroups according to more refined interests within the academy. We have found that learning the methodology of a discipline is, in and of itself, highly motivating for student follow-up. Group discussions and brainstorming sessions lead eventually to one or more specific problems that are viable for this investigative type of learning. Sometimes the products of enrichment clusters represent on-going services of a creative nature. Thus, for example, one group of middle school students who formed a television production company established an enrichment cluster that lasted over a six-year period. They presented their work on a weekly cable access television program in their city. New students joined the cluster as other students went on to high school, and the more experienced students served as mentors to the beginning students. High schools have blended already existing activities into their academies. Thus, for example, groups such as students who produce a school newspaper, yearbook, or literary magazine can be nicely blended into a Literature and Humanities Academy. Membership in the academy will help them broaden their perspectives about various types of writing through Type Is, expand their writer's craft through Type IIs, and give them opportunities to interact with others who share a love and appreciation for the written word.

In some cases, advanced level competitions are ideal situations for participation in existing programs that require high levels of scholarship, involvement and creativity. The Math Olympiad and the National History Day Competitions for middle and high school students are examples of programs that might be the focus of enrichment clusters or individual Type III pursuits. Opportunities for student publications at the school, local, state, and national levels are virtually unlimited, and other vehicles such as science fairs and artistic productions provide numerous opportunities for students to bring their work to bear on a variety of target audiences. Our experience has shown that the audience requirement for Type III Enrichment has a remarkably positive effect on students' motivation, the relevance and realness of their work, and their willingness to pursue advanced levels of understanding, scholarship, and creativity.

Part II: How Does an AITD Program Get Started?

1. General Orientation for Students and Parents

Prior to entrance into the middle or high school, a booklet describing the AITD program is sent home to students and parents. The booklet contains information about the mission, goals, and structure of the program, and a brief description of the general Academies of Inquiry and Talent Development around which the program is organized. In addition to the main focus of the respective academies, a few examples of potential clusters and cluster activities should be described². Emphasis should be given to the

² Initial year examples can be borrowed from other successful middle or high school cluster programmes. In subsequent years, local examples should be described, and students who have been involved in various activities (especially Type IIIs) should be asked to present examples of their work at the orientation sessions.

diversity of options that will be available over the 3 or 4 years of middle or high school enrollment. If students have been in an elementary school that uses the Total Talent Portfolio, the booklet should provide directions about analyzing their portfolio with their parents and teachers in order to make a decision about which AITD they would like to join. If students have not experienced a portfolio assessment at the elementary level, an interest assessment instrument can be sent home with the booklet, and students can be asked to spend some time analyzing their interests and making plans for the AITD they would like to join upon entering middle or high school.

In addition to the orientation booklet, an assembly for students and an orientation night for parents should be provided at the beginning of each year. After the first year of the program, students who have previously participated in clusters should be asked to make brief presentations about some of their cluster activities at the orientation sessions. The outstanding products of students should also be displayed throughout the building or in an “academic trophy case.”

2. Teacher Planning

Although many teachers have well-defined interests associated frequently (but not always) with their teaching assignment, we were surprised to find in our research on enrichment clusters that many teachers also had interests in a wide variety of other areas. Regardless of present levels of interest, we recommend that teachers begin by completing an interest assessment instrument entitled, *Inspiration: Targeting My Ideal Teaching Situation* (Gentry & Renzulli, 1995). An analysis of the responses to this instrument, and perhaps some discussion with friends and colleagues, will help teachers identify the AITD with which they would like to be associated. Teachers can, of course, make changes over time, and it is not unreasonable for some teachers to be associated with one of the AITDs.

Following this introspective process, teachers organize themselves into AITDs around the general areas of knowledge (Mathematics, Science, Art, etc.). They have informal meetings to develop a compatible philosophy, working relationship, and plan for team governance. They brainstorm some of the activities they would like to consider for short-term and long-term offerings using a planning format that is consistent with the mission and goals of the program and the pedagogical rationale underlying the three types of enrichment described above. It is essential at this point to emphasize that this program does not involve “another preparation” in the traditional way that teachers prepare to teach a new course. There are no prescribed lesson plans or unit plans. Various start-up activities have been suggested in descriptive material about this approach to teaching and learning, but it is also important for each AITD faculty to create its own modus operandi within the overall goals of their area of study. Figure 1 illustrates an example of an AITD devoted to the social sciences.

Potential Areas of Study in the Social Sciences	Type I Enrichment General Exploratory Experiences	Type II Enrichment Group Training Activities	Type III Enrichment Individual and Small Group Investigations of Real Problems (Enrichment Clusters)	Outlets/ Products/ Audiences for Type III Enrichment
History Geography Political Science Psychology Experimental Social Sociology Economics Anthropology Archaeology	Presentations by persons in each of the disciplines Visitations to sites where these people work Viewing videos of social scientists at work Brainstorming sessions about topics that might be interesting to study Read short accounts of the lives of famous persons in a field Debate and have panel discussions about critical issues Visitation to historical sites Brainstorming sessions about "Hot Topics" in the news Visit web sites to learn what persons in a discipline are studying Obtain data (e.g., stock market trends) from web Follow an on-going research project on the web	How to develop a survey instrument How to conduct an oral history interview Examination and discussion of interesting documents and products from the discipline Examine how a historian finds and focuses a research problem Use the Socratic Method to debate a topic Practice comparison and contrast skills using a newspaper or magazine article about a controversial issue Learn how to locate primary and secondary sources Multicultural Sensitivity Training Learn how to interpret data, descriptive statistics, graphs charts, tables Learn how to recognizing types of propaganda, bias and stereotypes Practice interviewing, forecasting and predicting using various data sources	The Oral History Research Institute The Creative Cartographers Guild The Animal Learning Laboratory The Local Survey Research Team The Political Action Association Shipwreck Explorers Lab Students for Social Action The Social Behavior Lab The [Local] Historical Society Psychology of Dreams Team The Native American Heritage Society The Hispanic-American Cultural Group The Asian-American Heritage Society The African-American Literature Institute The Women's History Institute The Victorian Historical Society The Business Researchers' and Investors Team The Stones and Bones Research Team	Presentations to local or state historical societies Maps of local historical sites, recreation areas Articles in school and city newspapers and magazines Geographic Olympiad Displays at public buildings, shopping malls, senior centers National Geography Bee Letters to editors, legislators Lobbying campaigns History Day USA Today Stock Market Game Historical dramatizations Photo essays, videos Archaeological Dig Public service projects Petitions to state or local officials Cultural presentations to primary students, clubs and service groups Articles in society newsletters Web page Debate/public panel Editorial in school or local newspaper

Figure 1: Academies of Inquiry and Talent Development: The Academy of Social Sciences

During the first year of the program, the early part of the school year should be devoted to Type I experiences that are designed to answer the critical questions listed above, and especially questions 1 and 2. Students should continuously be reminded that Type Is and IIs are invitations to various opportunities for individual or small group follow-up; and a debriefing guide (Renzulli & Reis, 1997, p. 150) should be used following each Type I and II experience in order to assess follow-up possibilities. Debriefing sessions result in clarifications of student interests, which in turn lead to the natural formation of groups that may eventually become enrichment clusters. Whether or not a group with a common interest becomes an on-going cluster is dependent upon group consensus regarding a specific problem they want to investigate, a product or performance they want to produce, or a service they want to provide. Keeping the focus on creative productivity is absolutely crucial! One of the major problems we have encountered in the enrichment cluster concept is a tendency on the parts of some facilitators to turn the clusters into mini-courses. Mini-courses are designed to teach a prescribed set of content or thinking skills to students. The topic(s) may differ from regular instructional units in that they deal with material not ordinarily covered in the regular curriculum, and they may use teaching strategies that are different from traditional recitation, drill, and testing practices. But the ultimate purpose of a mini-course is to “put into the heads of students” a *pre-selected* set of content and/or process objectives. While this is not an unworthy goal (indeed, such is the make-up of most school learning experiences), we have something different in mind when it comes to the central purposes of an enrichment cluster.

An enrichment cluster is a learning situation that is purposefully designed to produce a product or service that will have an impact on an intended audience. All learning that takes place within a cluster, whether that learning is new content, new or improved thinking processes, or new interpersonal skills is learned within the context of a real and present problem. We purposefully avoid pre-specifying content or process objectives because we want students to follow the investigative methodology used by practicing professionals in the real world. If we approached clusters by pre-specifying what and how students are going to learn, we would be returning to a traditional instructional model rather than a model that places primary responsibility for learning on the students.

Planning an enrichment cluster is, in many ways, an easier and more natural process than planning for traditional teaching. We need only determine (through discussions with students) a product or service and an intended audience, and then go about acquiring the resources and knowhow needed to produce the product or deliver the service. Whatever information, materials, problem solving skills, or assistance is needed to solve the problem automatically becomes relevant because these things are required to produce the product or deliver the service. Imagine for a moment all of the things about arithmetic, geometry, geography, architecture, purchasing, aesthetics, computer graphics, advertising, photography, accounting, cooperativeness, leadership, and ornithology that a group of middle school students learned simply by deciding that they wanted to design, construct, and market “environmentally friendly” bird houses and feeders. And notice how this topic became naturally interdisciplinary, rather than having to artificially look for ways to involve related disciplines.

Although enrichment clusters are modeled after natural learning situations, most of our teacher training has taught us that we must begin by “first stating our objectives and learning outcomes,” and then “designing lessons to achieve these objectives.” This traditional approach to pedagogy is a difficult habit to break. But it is essential that we move to an inductive approach to pedagogy rather than the prescribed/presented approach that typifies most traditional curriculum and mini-course activities.

The teacher’s role at this juncture is crucial. Rather than serving as lecturer or disseminator of knowledge, the teacher assumes the role of facilitator and coordinator of inquiry. Through the use of a planning guide called the *Management Plan for Individual and Small Group Investigations* (Renzulli & Reis, 1997, p. 223), the teacher assists students in framing investigative questions, locating resources, and identifying potential outlets and audiences. The enrichment cluster titles listed under Type III Enrichment in Figure 1 are examples of various offerings that have been developed over the years within the general domain of literature, language arts, and the humanities. The number and type of specific clusters that any given AITD might want to develop should be decided upon collectively by the AITD faculty and students. These decisions should represent a blend of information based on (a) the strengths of teachers and their interests within the general area of knowledge around which the AITD will be organized, and (b) a general sense of the strengths and interests of students as expressed in their Total Talent Portfolios or interest assessments. Using a brainstorming/webbing technique (Renzulli, 1994, p. 232), teachers can start to “flush out” what might be some of the specific areas of opportunity for creative productivity within the general cluster theme. Thus, for example, a group of teachers and students in an AITD that they chose to call the “Academy of Literature, Languages, and Humanities” came up with ideas for possible subgroups and product outlets related to six different groups of literature that can be categorized as: personal writing, imaginative writing, informative writing, drama, popular forms, and media composition. This brainstorming activity can be carried out with other subdivisions within the AITD (e.g., languages and humanities).

3. Maintaining High Academic Standards

A second problem we encountered in our research on enrichment clusters is a failure on the parts of some facilitators to escalate the level of knowledge pursued within a cluster. We have observed many exciting, fun-filled activities, and this kind of enjoyment of learning is unquestionably one of the most desirable features of a good cluster. At the same time, some critics have said that certain clusters are nothing more than “fun-and-games,” and others have said that the clusters are “soft on content,” that they don’t represent “real school.” We can guard against these criticisms by examining each cluster with an eye toward what constitutes authentic and rigorous content within the field or fields of study around which clusters are organized. For example, in the cluster on bird houses and feeders mentioned above, the teacher/facilitator began by helping the students obtain some books on ornithology, marketing, and advertising as well as How-To books on birdhouse and feeder construction. The students studied maps to learn about birds indigenous to their area of the country and their migratory habits; they learned about anatomy in order to determine the sizes of bird houses and openings,

and they studied different kinds of preferred diets, colors, mating habits, and optimal locations. Display boards with attractive drawings and photographs were prepared to help market their products, and printed material (produced with the aid of desktop publishing software) accompanied each bird house and feeder that was sold. The students became specialists in the various subtopics, the tasks required to develop high quality products, and the procedures for researching, constructing, and marketing their products.

The teacher/facilitator's role is crucial in escalating the content level of a cluster. Although it is not necessary for the teacher/facilitator to be thoroughly familiar with the content area(s) beforehand, it is necessary (a) to have an interest in the topic and a "feel" for content escalation, (b) to know how to find the resources that will advance the level of study, (c) to organize cluster activities so that knowledge escalation is pursued as part and parcel of the hands-on activities, and (d) to document the extent and level of the advanced resources used and the advanced content that was pursued in the cluster. Left to their own devices, the students in the bird house cluster might have skipped the underlying research in ornithology and marketing in favor of the sawing, hammering, and painting that was involved in the bird house construction. If such were the case, the cluster experience would have prevented students from having opportunities for higher levels of learning. Indeed, it could have easily fallen prey to the "fun-and-games" criticism that a casual observer might have made.

Guidelines for planning enrichment clusters (Reis, Gentry, & Park, 1995; Renzulli & Reis, 1997) offer suggestions for raising questions and obtaining resources that will assist teacher/facilitators in the process of content escalation. This process is obviously more demanding than merely guiding the hands-on aspects of a cluster, but it is also an opportunity for offering creative suggestions about the direction that the work of a cluster can take, and for guaranteeing that powerful learning is the hallmark of any cluster.

4. Finding Time For AITDs

The assassin of most new ideas for school improvement seldom has anything to do with the ideas themselves. Although the literature on strategic innovation has identified the major barriers to successful change³, the biggest problem we have encountered in implementing the ideas discussed above is time. In spite of almost universal acceptance of the objectives and the potential benefits of a comprehensive enrichment model, there is frequently an unwillingness on the parts of many educators to "mess around with the schedule." We have, however, seen some very innovative ways for dealing with the time issue. At a middle school in North Carolina, for example, a double period per week is set aside for the enrichment program by eliminating the home room/advisement period on what students called "cluster day" and shaving 9 minutes per period from each of the

³ Typical road blocks listed in the strategic change literature are: structural and cultural inertia, internal politics, complacency, weak or unimaginative leadership, fear of cannibalizing pet projects, satisfaction with the status quo, and a general lack of incentive to abandon a comfortable present for an uncertain future.

other classes on that day. At a high school in Connecticut, the principal “tightened up” the Friday schedule so that Friday afternoons were free for the enrichment program. She said that Friday afternoons “were formerly a down time, you know, TGIF; but the enrichment program turned that attitude around, and everyone left school on a high for the weekend!” Some schools have allocated time for the program through block scheduling arrangements, and still other schools have dropped one class meeting of each major subject area per month to yield a double time block once a week. Some schools have used their activity block for the program, others have carried out the program after school, and a few schools have made the “enrichment class” a part of the regular daily schedule. Other schools have devoted 2 half-days per month to the enrichment program, rotating the time blocks so that the same classes will not be missed.

There is no right or wrong way to schedule any program that requires a variation from the status quo. What is needed is a willingness to experiment with various scheduling options, a sincere belief that the experiences gained through an enrichment program are as valuable as what is being “missed” from the regular program, and an openness to the collective creativity of all persons who are willing to share their ideas about scheduling options. Scheduling options should always be pursued on an experimental basis, and input should be obtained from all persons involved (including students) following the conclusion of a trial period.

Getting Started and Creating Your Own Unique AITD Program

All Roads Lead to Rome!

There is no right or wrong way to implement a program based on the ideas and suggestions discussed above; however, the selection and use of a program development model must meet two essential requirements. The first requirement is consensus about objectives on the parts of persons who will implement the model. Everyone (or at the very least, almost everyone) involved in the selection and implementation of a model should agree that the mission and objectives represent a “destination” that they would like to reach. If an agreed upon goal is “to get to Rome,” then there is no ambiguity, vagueness, or misunderstandings about where everyone wants to go.

This first requirement of a model means that a great deal of front end time should be spent exploring alternative models, discussing and debating the advantages and disadvantages of various approaches, and examining related factors such as underlying research, implementation in other schools, and the availability of supportive resources. Reaching consensus before embarking upon a journey will help ensure that everyone involved gets to Rome rather than to Venice or Moscow!

There Are Many Ways to Get to Rome

A second requirement of a program development model is *unique means for implementation*. Although I believe that programs based on the AITD model should

strive to accomplish an agreed upon mission and set of objectives, I also believe that any plan for program development must allow for a great deal of innovation and flexibility in the achievement of these objectives. This flexibility is necessary because no written plan or set of procedures can take into account the variations that exist at the local school level. Differences in school populations, administrative leadership, faculty motivation, financial resources, the availability of persons from the community at large, and a host of other local variables must be considered in the implementation of this or any other approach to school improvement. A model that does not allow for such flexibility could easily become a strait jacket that simply will not work when one or more of the local considerations is not taken into account. Some schools will have supplementary resource teachers for advanced level students and others will not. Some school districts will have an abundance of community resources readily available and others, perhaps more geographically isolated, will have limited access to museums, planetariums, colleges and universities, etc. Some schools may serve larger proportions of culturally diverse students than others, and certain schools may already be embarking on major school improvement initiatives.

Another reason why I believe that a model for program development must maintain a large degree of flexibility is that educators tend to quickly lose interest in “canned” programs and models that do not allow for local initiative, creativity, and teacher input. New and better ways to provide enrichment experiences to students will be discouraged if program development does not encourage local adaptation and innovation to occur. The AITD plan provides a certain amount of general direction in both the development of program objectives and in the procedures for pursuing these objectives. At the same time, however, the specific types of activities that educators select and develop for their programs, and the ways in which they make these activities available to various populations of students will actually result in the creation of their own unique programming model. Educators will, in effect, be writing their own resource guide, because the actual content of the enrichment experiences will be developed locally by their own school personnel. I believe that if the AITD objectives are maintained, even in a slightly modified form, a school will achieve the integrity that is sought in this approach to increased levels of challenge within the respective contexts of middle and high school philosophies and missions. In this regard, the AITD model that educators develop locally will attempt to achieve the better of two worlds! First, programs will benefit from the theoretical and research developments and the many years of field testing and practical application that have led to this type of enrichment model. Second, the ideas, resources, innovations, and adaptations that emerge from local situations will contribute to the uniqueness and practicality of programs that are developed to meet local needs.

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