## Open-Ended Activities: Differentiation Through Learner Responses

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#### ABSTRACT

This article explores the meaning of curricular differentiation for identified gifted students by examining learner responses to open-ended activities. Very little research supports or describes how open-ended activities—which have been advocated as a strategy to allow students to work in their own interest areas, in their own learning styles, and at their own ability level-serve to differentiate the curriculum. This paper sets curriculum differentiation in an historical perspective, reviews a comprehensive investigation into the nature of open-ended activities, and focuses on how and in what ways the responses to open-ended activities of children identified as gifted differed from responses of children who were not identified as gifted in a third-grade and a fourth-grade heterogeneously grouped classroom. The study also focuses on teacher perceptions of classroom activities and learner responses. Data sources included observations over the course of one academic year, interviews with teachers and students, learning style and interest assessment instruments, and documents related to over 33 open-ended activities. Based on the findings reported here, the author proposes a reexamination of the meaning of curricular differentiation with a renewed emphasis on determining how an instructional strategy, for example, providing open-ended activities, maximizes student's capabilities.

At 10 a.m. Monday through Friday, all 24 students in Keith's third-grade classroom open their writing notebooks and begin their 30 minutes of writing time. They may write anything, in whatever genre they choose (fiction, non-fiction, poetry), and they may take as long as they'd like to finish a story that they have begun. For some children, one written piece may take weeks. When students finish their first drafts, they get help

from the teacher to edit their work. Then they copy their story into a final form and bind it to be displayed on a rack of finished stories.

Would all children want to be involved in such a learning experience? Could all children participate in such a learning experience? Should all children be expected to succeed in such a learning experience? If the answer is "yes" to all of those questions, then this

#### PUTTING THE RESEARCH TO USE

The findings presented in this paper have practical as well as theoretical implications. In most classrooms, teachers assume responsibility for differentiating the curriculum to address a diverse array of educational needs. Open-ended activities are an often-advocated, but ambiguous strategy for differentiating the curriculum in a heterogeneous setting. The teachers in this study demonstrated that they used a variety of open-ended activities for different instructional goals. Articulating openness as a continuum of choices in the content, process, and product domains provides a conceptual framework for empowering teachers and students in their instructional decision-making. Teachers may become more aware of how the design and implementation of open-ended activities affect the quality and variability of learner responses.

For researchers, this discussion of quality and variability suggests moving beyond the accepted theoretical framework of differentiation to a more individualized notion of maximizing student capabilities. Whether or not students identified as gifted responded in a way that was "qualitatively different" from their peers who were not identified as gifted was perhaps not as relevant as whether or not students responded in ways that maximized their performance. This paper ignites discourse about the meaning of curricular differentiation in heterogeneously grouped classrooms, and suggests a redefinition of "differentiation through learner response."

is not differentiated instruction for students identified as gifted as defined by Passow (1982). Open-ended activities, such as Keith's writing instructional time period, defy the criteria of differentiation suggested by these three questions. Open-ended activities embody instead the potential to differentiate the curriculum through learner responses. Differentiating learning experiences through learner responses, as opposed to offering different learning experiences, means to differentiate instruction by allowing students to work at their own rates, use their preferred learning styles, investigate their own interests, and produce work commensurate with their abilities. Research examining how learner responses can differentiate instruction is limited.

The application of curricular differentiation-providing different learning experiences to a selected group of children, one critical component of gifted education-is perhaps the most debatable issue in the field. Yet, it is the least understood for practitioners. It is no coincidence that Robinson (1995) noted that papers on curriculum study are the least selected for outstanding papers in Gifted Child Quarterly over the last 10 years. Delving into the complexities of the term curricular differentiation is a challenge for all researchers pursuing curricular studies. The purpose of this paper is to examine open-ended activities as an instructional strategy to differentiate instruction in a general educational setting. The meaning of curricular differentiation will be thoroughly explored first, because it is necessary to understand this concept before applying it to open-ended activities.

## Differentiation: An Historical Perspective

When the headlines from the Boston Globe read "Dull Work for Bright Students: Survey Finds Their Studies Repetitive" (McCarthy, 1992) and an article in the Chicago Tribune is titled "The Educational Mainstream Drowns Gifted Children," (Beck, 1992), the public is being made aware that education should be different for students with exceptional abilities. These headlines were generated after findings from a study conducted by The National Research Center on the Gifted and Talented, University of Connecticut, were made public (Westberg, Archambault, Dobyns, & Salvin, 1993). The study found that, although "nearly all gifted and talented students in this country spend most of their school day in the regular classroom" (p. 3), "target gifted and talented students experienced no instructional or curricular differentia-

tion in 84% of the instructional activities in which they participated" (p, 1).

In order to address curricular differentiation in the general education setting, the meaning of differentiation must be clear. Over the last two decades, the ambiguity of what is meant by curricular differentiation or the misapplication of differentiation principles has created hostilities that have brought charges of elitism to the entire field of gifted education. Sapon-Shevin (1993) not only criticized the notion of providing different learning experiences, but also faulted the basic principles which underlie the rationale for gifted education. Gifted programs, she argued, are not democratic. She stated:

Declaring that there is something undemocratic about gifted education, something fundamentally wrong with labeling a small group of children in a way that entitles them to a highly differentiated, almost always superior, education is a bit like saying that the emperor has no clothes—it is both patently obvious to many and yet not something we talk about. (p. 26)

The major finding of the Classroom Practices Survey, that classroom teachers make only minor modifications in the regular curriculum to meet the needs of identified gifted students, was criticized by Delisle (1994):

In a classic case of being damned if you do and damned if you don't, teachers who claimed they treated their gifted and 'average' students differently could be accused of giving preferential treatment, while those who did not distinguish between students as regards resources and instruction might be chided as being boring. Go figure." (p. 226)

At the 1995 annual convention of the National Association for Gifted Children, the meaning and history of curricular differentiation was revisited with a panel discussion entitled, "Beyond the Leadership Training Institute (LTI) Principles-What Is Appropriate Curriculum for the Gifted?" (Callahan, 1995). Most significantly, this discussion was to heighten an awareness of the distinguishing features of curriculum for identified gifted students and to question, perhaps intellectually, how it is different from best practices in curriculum and instruction for all learners. Panel members were asked specifically to address the relevancy of the founding principles of curricular differentiation within the context of the 1990s curriculum reform movements. I present the reader now with an overview of the historical perspective of differentiation as it came to be defined in the field of gifted education. In order to understand what is meant by differentiation through "learner responses" and to comprehend the significance of this strategy, it is necessary to see how the meaning of curricular differentiation has evolved.

#### Ward's Theory

In 1961, Virgil Ward wrote a theoretical book entitled Education for the Gifted: An Axiomatic Approach. Although gifted education was advanced by the events surrounding Soviet competition and Sputnik in the 1950s, Ward's book was one of the first to conceptualize characteristics of gifted education as different from education for all students. He has often been referred to as the "grandfather" of Differential Education for the Gifted (DEG). His theory consisted of propositions and corollaries based upon learning characteristics, social and historical context of school and society, and pedagogical principles. Though they were developed over 30 years ago, they still remain the theoretical framework from which many practitioners have developed their curricular models. While many references in the literature credit other authors for principles of differentiated instruction, it can clearly be seen in Ward's work that he advocated differences in process, product, and content domains. One of his propositions stated: "The education of the gifted child and youth should emphasize enduring methods and sources of learning, as opposed to a terminal emphasis upon present states of knowledge" (p. 156). Long before creative problem solving programs became prevalent, Ward advocated that "learning should be conceived as the continuous, ongoing acquisition of data pertinent to problem situations, not as a set of given facts which, it is hoped, will apply to problems that arise subsequently in the life career" (p. 156). One of the major criticisms of Ward's theoretical framework is that he based all of his propositions on the characteristics of gifted children whom he defined as those with exceptional intellectual ability. His theories were based on a narrow definition of giftedness (children who scored at least two standard deviations above the mean on a test of intellectual ability).

#### **Definitions and National Guidelines**

In 1976, the Office of the Gifted and Talented defined differentiated education or services as

that process of instruction which is capable of being integrated into the school program and is adaptable to varying levels of individual learning response in the education of the gifted and talented and includes but is not limited to:

- A differentiated curriculum embodying a high level of cognitive and affective concepts and processes beyond those normally provided in the regular curriculum of the local educational agency;
- 2. Instructional strategies which accommodate the unique

learning styles of the gifted and talented; and

3. Flexible administrative arrangements for instruction both in and out of school, such as special classes, seminars, resource rooms, independent study, student internships, mentorships, research field trips, library media research centers and other appropriate arrangements. (North Carolina State Department, 1988, p. 24)

In 1981, The National/State Leadership Training Institute on the Gifted/Talented sponsored the First National Curriculum Conference for the Gifted and Talented in Baltimore, Maryland. The mission of the participants was to clarify the questions raised by the Marland Report (Marland, 1972), which listed three characteristics for a differentiated educational program for gifted students:

- a differentiated curriculum that promotes higher cognitive processes;
- instructional strategies that accommodate both curriculum content and the learning styles of gifted and talented children; and
- special grouping arrangements appropriate to particular children (i.e., special classes, honor classes, seminars, resource rooms, and the like).

Out of this First National Curriculum Conference came Passow's frequently quoted seven guiding principles to differentiation:

- The content of curricula for the gifted/talented should focus on and be organized to include more elaborate, complex, and in-depth study of major ideas, problems, and themes that integrate knowledge with and across systems of thought;
- Curricula for the gifted should allow for the development and application of productive thinking skills to enable students to reconceptualize existing knowledge and/or generate new knowledge;
- Curricula for the gifted/talented should enable them to explore constantly changing knowledge and information and develop the attitude that knowledge is worth pursuing in an open world;
- Curricula for the gifted/talented should encourage exposure to, selection, and use of appropriate and specialized resources;
- Curricula for the gifted/talented should promote selfinitiated and self-directed learning and growth;
- Curricula for the gifted/talented should provide for the development of self-understandings and the understanding of one's relationship to persons, societal institutions, nature, and culture; and
- Evaluations of curricula for the gifted/talented should be conducted in accordance with prior stated principles, stressing higher-level thinking skills, creativity, and excellence in performance and products. (Passow, 1982, pp. 7–10).

Passow maintained that differentiation was relative to what was being taught in the regular curriculum. In a paper prepared by Passow (1982), the Curriculum Council put forth the following definition of differentiated curriculum:

Differentiating curricula for the gifted/talented is essentially a process of individualizing curricula to better match individual and group learning needs, abilities, and styles. For the gifted/talented, "differentiated curriculum" denotes sets of specialized learning experiences which develop the unique abilities of students identified as "gifted/talented." A differentiated curriculum embodies recognition of differing learning rates, styles, interests, and abilities. Curriculum differentiation aims at eliciting learner responses [italics added] commensurate with gifts or talents. (p. 6)

Passow pointed out, "We are concerned with cliciting what might be called a 'gifted response,' the result of interactions between the predispositions the student brings to the learning situation and the richness of the situation itself" (1982, p. 7).

## **Curricular Implications**

Thus, even though Passow stated the importance of the "gifted response," most of the curricular implications have focused on "should" statements about the type of instruction which should be given to students identified as gifted (Kaplan, 1974; Maker, 1982; Passow, 1982). For example, Renzulli (1977a) emphasized the following modifications:

- teachers must move above and beyond the regular curriculum;
- teachers must take into account specific content interests of students;
- 3. teachers must accommodate students' preferred styles of learning; and
- teachers must give gifted/talented students opportunities to pursue topic areas to unlimited areas of inquiry.

Maker's (1982) list of suggestions for curricular modifications included the following:

- 1. it must be more accelerated or advanced:
- it must be more complex;
- 3. it must move beyond the regular curriculum;
- 4. it must be selected by the students according to their interests; and
- It must be concerned with the more abstract concepts in each content area.

Although the authors are unlikely to have intended it, the nature of a differentiated curriculum, as embodied above, has relied historically on practices advocated for identified gifted children, but has been deemed inappropriate for children not identified as gifted. Research supporting most of those strategies, particularly in the area of curriculum, is lacking (Shore, Cornell, Robinson, & Ward, 1991).

Maker maintained that many of the "curricular principles advocated for gifted children were appropriate for all children because they were designed to allow participation at the student level and encourage responses at the highest level possible" (1986, p. 63). It cannot be supported that these teaching strategies need to be both "appropriate for the gifted and inappropriate for other students" (Maker, p. 63).

Expanding definitions of giftedness have compounded the problem of determining what is appropriate for gifted children and inappropriate for all children. Giftedness is no longer defined by a score on a standardized test of intelligence. Rather, the construct of giftedness is variable and does not define a homogeneous population (e.g., IQ over 130). A child may be labeled gifted in one school district and not gifted in another within the same city or state, depending upon the criteria used for the selection process. This variability in who is labeled gifted and who is not. changes the way identified gifted children can be grouped. Students identified as gifted do not all have the same learning characteristics. Therefore, curricula cannot be prescribed for their characteristics as a whole group. Some children not identified as gifted by the arbitrary criteria set forth in a particular school district's definition have indeed benefited from curriculum and teaching strategies designed for gifted students (Reis et al., 1993).

Returning, then, to the notion that curriculum differentiation aims at "eliciting learner responses commensurate with gifts or talents" (Passow, 1982, p. 6). we must examine those activities that allow for differentiated responses. Open-ended activities have the potential to allow for differentiated responses, but there has been little discussion in the literature of this strategy for curricular differentiation. If the most basic principle underlying curriculum development for the gifted is that the "experiences for these children must be qualitatively different from the basic program provided for all children" (Maker, 1982, p. 3), then responses to learning activities must be examined to determine if and how they are qualitatively different. Thus, although the investigation into the nature of open-ended activities (Hertzog, 1995) delved into all aspects of the teaching strategy including design, characteristics, and interactions among the students and

teachers, this paper focuses on the learner responses to those activities. It is necessary now to define openended activities as they were conceptualized for this study.

## **Definition of Open-Ended Activities**

In the literature on creativity, open-ended activities referred specifically to those activities with multiple responses (enhance fluency), rather than one correct answer. Maker (1982) expanded the meaning of openended activities to include not only variety in the end product (i.e., the response), but also in the process. Her definition of open-ended activities involved choices.

Expanding the definition of open-ended activities from being open only in the product domain to those that provided the learner with choices in the content, process, or product domain enhanced their potential use as a strategy to modify curriculum. Using the conceptual framework of curricular differentiation to examine open-ended activities, I articulated differences between the activities, and specifically looked to see in what ways the curriculum was modified for students who pursued open-ended activities.

By examining the ways that curriculum was differentiated, a broad rather than narrow definition of curriculum was used. This broad definition of curriculum includes "all of the experiences, both planned and unplanned, that occur under the auspices of the school" (Jackson, 1992, p. 8). Situating open-ended activities into the larger framework of classroom research, they can be described as an instructional strategy or instructional format, the third of six components of instruction as defined by Anderson and Burns (1989), "patterns of teacher behavior that are recurrent, applicable to various subject matters, characteristic of more than one teacher, and relevant to learning" (Gage, 1969, as cited in Anderson & Burns, 1989, p. 11).

The research question guiding the study was how open-ended activities provided curricular differentiation in a general education setting. Responses to open-ended activities included the interactions that students had with the subject matter, the teacher, their peers, curricular materials, and their classroom environment. Responses included the products of these interactions as well as the processes of completing the products. A qualitative design was needed to appreciate the complexity of the relationships between the teacher, the curriculum, implementation of the instructional strategy, and the classroom dynamics which influenced the students' learning experiences.

#### Method

Using a naturalistic, qualitative design, I observed how open-ended activities were designed across curricular areas, and focused on the way students who were identified as gifted responded to them in one third- and one fourth-grade classroom throughout one academic year (Hertzog, 1995). No attempt to alter the patterns or methods in which the teacher implemented them were made. Thus, they were observed with all of the complexities of classroom life, including last minute or on-the-spot changes in implementation, as well as ritualistic (same day, same activity) implementation. The phenomenon under study was the relationship of openended activities to curricular differentiation.

#### Setting and Participants

Purposeful sampling (Patton, 1980) was used to select the setting and participants. The school district was selected because there were no formal pull-out programs or special classes for identified gifted and talented children in this district. Curricular differentiation for students identified as gifted was the responsibility of every classroom teacher. Therefore, I expected that all teachers would be using strategies to differentiate curriculum and instruction. The selection of teachers Keith and Becky represented extreme case sampling because I chose them for their interest in meeting the needs of identified gifted students. Both teachers were building representatives on the district wide committee for gifted education. Both teachers self-reported that they used open-ended activities on a regular basis. They provided opportunities for me to observe open-ended activities over an extensive time period.

The school district was situated near a large state university in the midwest. The district reported a population of 4,703 students with a 92.9% graduation rate. Demographics for the 1995 school year were reported in the Annual School Report Card: 65% Caucasian, 24.9% African American, 2.1% Hispanic, 7.7% Asian/Pacific Islander, and .2% Native American.

Teachers. Keith, the third grade teacher, was the building coordinator for gifted programs for several years. He had a Ph.D. in education, an administrative certificate and nearly 20 years of teaching experience. His classroom had 14 boys and 10 girls. Eleven were identified gifted students, four were receiving special education services for their learning disabilities (LD), and one was labeled behavior disordered (BD).

Becky, the fourth grade teacher, had a B.A. in education and more than 25 years of teaching experience.

Becky had a total of 28 students, 15 boys and 13 girls, in her class. Many of her students received special education services. Four students were labeled learning disabled (LD), four students received speech therapy, two went to the Chapter 1 reading program, five saw a social worker, and two were referred for special education for exhibiting evidence of behavior disorders. Because of her experience and her interest in gifted education, Becky had all of the identified gifted students from the fourth grade, a total of nine, in her class.

Students. Eleven out of 20 students identified as gifted in both classrooms were selected to be the target students for the study (see Figure 1). The primary criteria for selection was parental consent for students' responses of open-ended activities to be copied and collected for the study. In Keith's room, I chose 6 students out of 11. Of the five that I did not target, one parent refused permission, two parents did not return permission slips, one child was away from the country the first semester, and the last student was the child of my faculty advisor. Out of a pool of nine in Becky's classroom, I targeted five stu-

dents whose parents also consented. Of the four whom I did not choose, one parent refused permission, and the other three failed to return consent forms. Four out of five of the target students from Becky's room were female because only one out of five identified male students returned the consent form. Figure 1 summarizes their gender, ethnicity, and areas of giftedness identified.

Children in the district were identified as gifted in the areas of leadership, creative/higher level thinking, visual/performing arts, language arts, mathematics (concepts or applications), science, and social studies. The State Comprehensive Plan for Gifted Education (School District 116, 1990) stated,

Although the identification is an ongoing process, students will be evaluated at the beginning of the kindergarten year, the fourth grade year, the seventh grade year, and the ninth grade year. With the exception of the kindergarten year, these are years which follow achievement testing. In addition to these objective measures, one or more subjective measures are used to confirm identification of talents. Subjective measures may be a checklist nomination completed by teachers, peers or parents, past grades and performance, or products, auditions or portfolios. (p. 4)

Figure 1

Target Children and Their Identified Area of Giftedness

Student	Areas of Giftedness									
	GE	ET	C/HL	LA	LS	MA	RE	SC	so	V/PA
Keith's Third Grade										
Terrance	M	C	X	X	X	X	X	X	X	
Mickey	M	C			X		X	X	X	
Sandy	F	$\mathbf{C}$	X	X	X	X	X	X	X	X
Mali*	M	M					X			
Jennifer	F	$\mathbf{C}$			X					
Elaine	F	C			X					
Becky's Fourth Grade										
Gene	M	M	X	X	X	X	X	X		
Annie	F	$\mathbf{C}$	X	X	X	X	X		X	
Roxanne	$\mathbf{F}$	C	X	X	X	X	X			
Deanna	F	$\mathbf{C}$		X	X	X	X		X	X
May	$\mathbf{F}$	C	X	X	X		X	X	X	X

<sup>\*</sup>Identified in math by previous school district.

Note: GE=Gender, M=Male, F=Female, ET=Ethnicity, C=Caucasian, M=Minority

C/HL=Creative/Higher Level Thinking, LA=Language Arts, LS=Leadership, MA=Mathematics, RE=Reading, SC=Science, SO=Social Studies, V/PA=Visual/Performing Arts

Approximately 15–20% of the students were identified as gifted in this school district. Third-graders were identified based on their kindergarten screening test scores from the Peabody Picture Vocabulary Test and a recommendation from their classroom teacher. Fourth-graders were screened by using the third-grade scores resulting from the Iowa Test of Basic Skills (ITBS). Cut-off scores for the various subject areas included 70th percentile in vocabulary, reading comprehension or language skills; 95th percentile in math; 90th percentile in science; and 80th percentile in all other areas.

#### Data Sources and Analysis

Data sources included observations, interviews with participating teachers and target students, and documents related to the activities or the classrooms of the participating teachers involved. Over 100 hours were spent observing in the classrooms from October 1993 to May 1994. Thirty-three different open-ended activities were analyzed.

Observational data were triangulated with students' responses on the Interest-a-lyzer (Renzulli, 1977b), and the Learning Styles Inventory (Renzulli & Smith, 1978). These instruments were used to determine whether responses to open-ended activities were in students' preferred learning styles, interest areas, or both. Two formal interviews and ongoing informal interviews with cach classroom teacher, as well as informal interviews with target students, were also used to triangulate observational data.

Data analysis was inductive, allowing categories, themes, and patterns to emerge (Janesick, 1994). To analyze how open-ended activities were designed and implemented, I developed the Open-Ended Activity Profile, adapted from Kaplan's Grid (Kaplan, 1986). Using a matrix as a form of data display is a recommended strategy for analyzing qualitative data (Huberman & Miles, 1994). Operational definitions of content, process, and product were generated for the purposes of categorizing the choices in the open-ended activities. Content referred to the topic or area of study. The process category included choices in how the children would proceed during the open-ended activity. Examples of choices in the process domain include sequence, materials, selecting work partner(s), working at school or at home, or choosing from processes specific to a discipline such as editing before doing a final draft, predicting before calculating, or working backwards to solve a math problem. The product domain was defined as the tangible response to the

activity. The activities were described by examining whether students had unlimited, many, few, or no choices within those domains.

#### **Establishing Trustworthiness**

Three methods were used to enhance the credibility of the study: prolonged engagement, persistent observation, and triangulation (Lincoln & Guba, 1985). In addition, member checks were an integral part of the study. Engaging participating teachers in constant dialogue about the activities, interviews, and observations provided ongoing member checks for the analysis and writing stages of the study. Transcripts were routinely shared with participating teachers for their edits and comments. This ongoing communication gave insight and credence to interpreting the findings.

A variety of data sources, data triangulation described by Denzin (1978), were used to verify observational data. For example, to verify that students' responses reflected their ability levels, multiple student responses were collected over time, teachers were interviewed to ascertain their assessment, and informal interviews with the students were documented in the field notes. To determine whether the students made choices according to their preferred learning styles, observational data was triangulated with the Learning Styles Inventory (Renzulli & Smith, 1978), teacher interviews, and informal student interviews which were documented on a daily basis in the field notes.

Other methods to enhance the credibility of the study included peer reviews, interim and progress reports, and prolonged engagement in the field. Peer reviews occurred during the data collection, analysis, and writing processes of the study.

#### Reflections of Personal Bias Toward Open-Ended Activities.

The biases within the researcher must be examined in qualitative studies, as bias must be examined in instruments of measurement for quantitative studies. To examine emerging subjectivities, I kept a reflective journal. In the journal, I kept track of my thoughts about my research, my decisions along the way, and my biases toward open-ended activities and my participants. Reflective journals have been advocated in the literature (Van Manen, 1990).

Throughout the study, peer reviewers questioned me about my biases toward open-ended activities. Prior to the study, I highly valued them. I suspected strongly that (a) responses from open-ended activities revealed more about the students than responses from close-

ended activities; (b) it is good to know as much as possible about the students; (c) the more teachers know about their students, the more teachers can personalize instruction, and (d) the more personalized instruction teachers give to students, the more engaged students will be in their learning. Ultimately, I wanted to make it easier for teachers to develop open-ended activities. As the study progressed, and I examined the complexities of their design and use, I became more cautious in my advocacy. This cautious stance will be described more fully when I present the implications of this research in the discussion section of this paper.

#### Open-Ended Activities Across the Curriculum

Open-ended activities were observed in nearly every curricular area, although they were designed and implemented differently across the two classroom settings. Briefly, I will describe some of those differences and the types of activities which I observed in each setting. Space is too limited here for a thorough description of all 33 activities. For a more thorough discussion of all of the activities, see Hertzog (1995).

In Keith's third grade classroom, I observed mostly writing, reading, discussion periods, and "free time" because these were the areas in which he told me I would have the most opportunities to see children engaged in open-ended activities. As explained earlier, writing was routinely an open-ended activity time period where children had approximately 30 minutes to write whatever they wanted in their notebooks. They could write with a partner or by themselves, at their seats or somewhere else in the room. They had many choices in the content and process domain, but their choices in the product domain were limited. Students were expected to write a first draft of a story, get help from a teacher to edit it, copy it over in final form, and bind it with a book binder that was located in the room. Students had the choice of sharing stories orally with the class or leaving it on a book rack to be read by other children.

Reading in Keith's room was a time for children to read any book of their choice silently at their seats or somewhere else in the room. Keith held private book conferences with the children to enhance understanding of what they read and to share information about their chosen books with him.

In Keith's room, discussion periods took place regularly every morning and every afternoon at group meeting times. Keith often let children discuss what was on their minds. Children had free time when they finished their work and the teacher was not ready to move on to the next subject. Keith valued free time. Most days Keith built a free time period into their schedule. Children could choose to do anything during free time, including playing games, drawing pictures, listening to music with ear phones, or working on plays together. Keith's free time had unlimited options in every domain: content, process, and product.

Whereas Keith's open-ended activities were built into the pattern and construction of his schedule and subject areas. Becky routinely varied the design of her open-ended activities across the disciplines. In Becky's room, I observed math, science, language arts, French. and discussion periods. Becky constructed open-ended activities for writing on some days by giving students a theme or title to write about, or asking students for a specific genre within which they could choose the topic. Becky frequently varied the number of choices and types of domains in which the activities were open. Becky's math, however, focused on problem solving skills and nearly always had unlimited options in the process domain. Examples of how some of these activities were analyzed graphically on the Open-Ended Activity Profile are given in Figure 2.

Figure 2

Activities categorized on the Open-Ended Activity
Profile

Domains									
Choices	Content	Process Pro	duet						
Unlimited Many	KW, KFT	KFT, BMPS	KFT						
Few None	BW BMPS	KW BW	KW BW, BMPS						

Note: KW=Keith's Writing Period, BW=Becky's Writing Activity-Title Given, KFT=Keith's Free Time Period, BMPS=Becky's Math Problem-Solving Time

The Open-Ended Activity Profile provided an analysis tool to examine the differences in design of the open-ended activities. They also enhanced the analysis of the student's responses in terms of their variability. In other words, when students had few or no options within one domain, were responses more similar than when students had unlimited options within one domain? If students had unlimited options within the

product domain, were their responses more varied than if they had unlimited options within the content domain? Thus, variability (differentiation) was explored not only among students' responses, but also in relation to the type of open-ended activity that was presented.

#### Results

#### How Responses to Open-Ended Activities Differed

To examine how open-ended activities differentiated instruction through learner responses, it was necessary to apply the principles of differentiation as stated earlier. I explicitly asked the two teachers how responses from identified gifted children differed, in general, from responses of other children on open-ended activities. Keith explained:

One thing that surprises me is that most often times my high achieving students or the students who are traditionally A students don't tend to just do the assignment and quit and do something else. They tend to also elaborate, take more time, be more personally involved, and it's certainly encouraged.

Becky described how her students identified as gifted performed differently from her other students in open-ended activities:

If I ask them, if we're studying other cultures or something, they can select an easier or a more difficult level. Usually, the children who aren't very gifted perhaps will write about things that they see in the films and things that we do in class, but don't do a lot of research to find out more things to go into depth. And the children who are the real thinkers and the readers will go in and read through encyclopedias, books and all kinds of wonderful things.

Note that Becky and Keith perceived differences in the students' process of learning and in the products. Becky and Keith described evidence of students taking on self-initiative to make more elaborate and better products. They also described how students became more involved in the process of learning, and sought external resources according to their interests. My observational data and copies of students' responses verified the teachers' perceptions. This level of personal involvement was especially seen in the writing instruction in Keith's room, and in the project activities in Becky's room. Targeted students in Keith's room were self-motivated to create elaborate stories, and they often planned ahead for other stories. In Becky's room, targeted students raced to tell me about the projects, how and with whom they planned them, where

they met after school, and all of the materials and resources they used, including a child's home computer. Most of the other children in her room, doing the same projects, did not seek outside help or materials. or meet after school to work on their projects.

The teachers saw variability in terms of interest and going beyond what other children did. Going "above and beyond" what other children do is supported in the gifted education literature as a means of differentiating instruction. In this sense, open-ended activities were a means of providing opportunities for students to go beyond what was required. However, to examine whether responses were in other ways qualitatively different, I looked at other dimensions of variability. Specifically, I questioned teachers about whether the quality of students' products or responses differed, and whether students were working at their ability levels.

#### Judements of Quality

Becky and Keith did not compare responses of targeted students to other students. Rather, they individualized their evaluation criteria and evaluated students' responses based on their perceptions of the students' capabilities. This factor may have been instrumental in facilitating the environment for the activities to occur. Students were not threatened by unfair comparisons of their products.

When the products were in written form, such as Keith's writing or stories in Becky's class that focused on a given topic, the quality of writing reflected students' writing abilities. The district writing expert scored writing samples holistically according to quality of content, organization, style, and mechanics. Without knowing who the identified gifted students were, she was able to name all but two of the targeted students by examining their writing samples. This demonstrated that most of the targeted students performed better than their peers on these activities. The open-ended writing activities provided an opportunity for children to produce qualitatively different responses which demonstrated their strength in the language arts area.

Some of the responses to open-ended activities involved drawing. Elements of drawing ability were never part of the teacher's evaluation criteria. Some of the students who were not target students demonstrated exceptional drawing skills with elaborate details, unusual uses of space and color, and original ideas. The drawing samples serve to illustrate that targeted students, no matter how motivated, how capable, or how organized they were, did not perform necessarily better as a group than their peers on activities which involved drawing. This was totally dependent on students' interests and strengths in the art discipline. In fact, responses in this format gave students who were not identified as gifted an opportunity to demonstrate their strengths and creative imagination through their drawing.

Quality of responses seemed relatively unimportant to the teachers in some of the open-ended activities. Becky used the math and science journals for her own information and for class discussion. When she asked the students to write down the hardest math fact they knew, or some scientific event that they had heard about over the weekend, the purpose was to share information, not to judge the quality of their work. For example, in the science journals, it was evident that some of the students understood the science concepts they wrote about while others did not. In our interview, I talked with Becky about the science journal responses. She said that she just wanted to know if they could relate some of the things they see to science. I asked her if it was important for them to get the scientific principle correct. She replied, "Since I never talked to them about that, or explained to them that they had to understand it, I certainly wouldn't have evaluated them on that."

Thus, although quality of responses in the science journal was not an issue to the teacher, quality differed in the criteria that I developed for analysis purposes: writing clarity, sophistication, understanding of the assignment, and the students' abilities to relate what they saw to science. Referring back to Passow's three questions: All children participated in their science journals (whether they wanted to or not), all children were able to participate at their own ability level, and all children were expected to succeed in this activity, because it was designed to provide the teacher with information. To further allow the reader to judge how quality differed between targeted and non-target students, four examples of science journal responses (what they saw in the last week that related to science) are given below. The first two (R1, R2) are from target students, and the second two (R3, R4) were chosen randomly from Becky's other students. They are quoted with their original spelling:

R1: Dec. 14, 1993

Last week in Science, I liked it when the student teacher did a sort of science experiment with us with the eggbeaters. We had to find out how many times the beater goes around when you turn the wheel around once. Then twice, and so on. R2: My mom blew up our baked potatoes. When she forget to fork them she opened the microwave and pop, bang, we had mashed potatoes. It's scientific because it had to [do] with machines and electricity.

R3: On Saterday moring tuck apurt my toy car. Thin I let it go and I sall how the lechtrysoty run throe it.

R4: I saw my mom makeing hameburgres.

After discussing all of the science responses with Becky, she commented, "It's really interesting, you know, when you give these kinds of assignments, you give it for one reason and maybe, you know, you learn so much more." These responses, although brief, were indicative of writing, spelling, organization, and thinking abilities. They revealed students' awareness and interest in science. The emphasis on the journal activities was on what the children knew, not on how well they expressed it. Thus, although the quality of responses differed, this appeared to be irrelevant to the goal or the instructional design of the activity. For Becky, a high quality response was not a goal in the science journal. Instead, her goal was simply to learn about the students' abilities to connect an event to science. In reviewing the students' responses with me, she admitted that she learned more about the students than she had expected. Judgments of quality in open-ended activities that are primarily designed for self-expression may not be important to the teacher, even though these types of activities may reveal vast differences in abilities and interests.

In summary, the quality of responses was based on arbitrary criteria, contextual for each open-ended activity. The quality of responses was indicative of differences in students' abilities. In most cases where the products were written, responses required language skills such as spelling, use of capital letters, sentence structure, and organization. Targeted students' written responses most often could be discerned from the written responses of their peers who were not identified as gifted in the language arts area. This finding, although not surprising because most of the students were identified as gifted in the language arts area, demonstrated that open-ended activities such as journal writing provided those students an opportunity to express themselves in their strength areas (e.g., language arts).

Comparing quality of responses between targeted and other students was not the whole issue. Specifically, I wanted to know if the quality of response matched students' ability levels, because this would be an indicator that the activity served to differentiate instruction according to the characteristics of the learners.

# Relationship of Response to Structure of the Activity

I examined whether the design of the open-ended activities gave students the option of performing in a way that either was or was not commensurate with their abilities. I believed that attitudes as well as the instructional design factored into whether students worked at their ability levels. Because the teachers knew the students' ability levels better than I did, I questioned the teachers, "Does the quality of response match their ability level?" Keith responded, "Generally yes ... There are rare exceptions, and that is a student who has a particular aversion to a discipline area and they tend to do minimal work." Keith gave me the example of one of the target students in his room whom he felt was not writing to his potential. Keith felt that the student needed to get used to the writing instruction, and then he would perform at his ability level.

Where I expected the most visible differences to occur in students' responses were those activities where students had the most choices in the product domain, the traditional open-ended view. In all of these types of open-ended activities, students had an opportunity to work in groups or with a partner. Interestingly enough, I found that when there were unlimited choices within the product domains, more similarities in responses existed than differences. Giving students unlimited choices within the product domain did not necessarily result in vast differences in their products. Other factors worked to enhance the similarity of their products, including group dynamics, peer pressure, and spontaneous examples being given to the students by the teachers during the activity. For example, in describing the noun presentations to the class, Becky simply suggested a game show idea and every group but one proceeded to do a game show. The original intent or design of the activity was for the students to review a particular section of their language books on nouns, and make a presentation about what they learned in that section. The French teacher asked the students to design their own menu and dramatize being at a French restaurant. When she introduced the activity, she told Becky's students how another class had used paper for their food items in the restaurant presentations. She did not tell Becky's class to do the same, but they did. Because these activities were shared with classmates, other students had the opportunity to use the same ideas and shape their responses similarly.

It is important to note the distinction between the structure of the activity and its implementation. The teacher designed the noun presentation activity to have unlimited options in the product domain. Becky's suggestions during the implementation phase of the noun presentation activity may have altered the choices that students made, but her suggestions did not alter the original design of the activity. As in all matters pertaining to instructional design, the method of implementation has the potential to change the experiences of the students. In analyzing the relationship of students' responses to the design of the activity, it is important to understand the factors during implementation that impacted the intended design.

In terms of ideas, the greatest differences in responses seemed to emerge when there were few or no options within the product domain. In other words, the children had to have the same product, but had options within the content and process domains. It is significant for teachers to be aware that offering options within the content and process domains (and not just in the product domain) provides students with opportunities to demonstrate creative thinking.

The ABC story activity is a good example to illustrate differences in children's ideas within the confines of the same product. The children were asked to write a story with each sentence beginning with the next letter of the alphabet. Differences occurred in the content domain, even though the product was quite structured. The stories resulted in very creative responses. In general, children seemed to enjoy having choices in the content domain. Differences in students' interests were most prevalent when activities provided unlimited choices within the content domain, such as writing in Keith's room, silent reading, free time, and discussion periods.

The data suggested that responses to open-ended activities that had virtually no options in the product domain were still differentiated. These activities revealed students' academic abilities, creative thinking, and personal interests. In contrast, when there were unlimited choices in the product domain, the activities were most often group-oriented, and it was difficult to see differences according to individuals' abilities, interests, or preferred learning styles.

#### Differences Related to Making Choices

An unexpected finding was that in some types of open-ended activities where unlimited choices were provided in the process domain, students consistently chose to pursue these activities with peers of similar abilities and with peers of the same ethnicity. In this respect, at times, the social and learning structure of the room became grouped along lines of ability and eth-

nicity. This differs from traditional instruction where teachers make intentional decisions about grouping children in their classrooms. Open-ended activities allowed students to make decisions about grouping in their class, often resulting in self-selected grouping patterns. Open-ended activities also provided an outlet for students to express their preferences for working with students of similar abilities. Thus, by working together consistently and over time, students with high abilities were experiencing different learning opportunities than those children of low abilities who consistently chose to work together.

Students, when given the opportunity, made other choices consistently in addition to their work partners. These patterns of consistency, described through five case studies (Hertzog, 1997), allowed students to work predominately in their preferred learning style and with their preferred peers, which contributed toward their making choices to work at their level of comfort rather than challenge. Thus, although their responses to open-ended activities were differentiated, and they provided a vehicle for curricular differentiation to occur, they did not represent necessarily the maximum capabilities of the children.

#### Summary

In summary, the findings suggested that targeted students' responses to open-ended activities were qualitatively different from those of students not identified as gifted. The fact that the quality differed between targeted and non-targeted learner responses was not necessarily seen by the teachers as the intention for using them. Differences in the content, process, and product domains of "general" curriculum were manifest through student choices as opposed to teacher choices. Differentiation occurred by students responding in more depth, with higher level skills, and in ways which were guided by their learning style preferences, and not from the teacher offering something different, more complex, or more abstract.

#### Discussion

The notion that all children can be doing the same thing (i.e., be given the same assignment) at the same time, and yet yield variability in responses, implores us to look beyond the previous standards for defining differentiation in gifted education: would, could, and should statements. This examination into the nature of students' responses compels us in the field of gifted

education to examine more in depth the meaning and nature of curricular differentiation.

To be qualitatively different, with whom should the quality be compared and how should that quality be assessed? In this study, I was more interested than the teachers in the relationship of targeted students' responses to non-targeted students' responses. Both of the teachers in this study evaluated the students' responses to open-ended activities according to their beliefs about the individual student's abilities and not on criteria that was standard for all children. In interviews, the teachers told me that they had different expectations for their students and evaluated their work according to those expectations. It could be inferred from this that providing standard criteria for evaluation of open-ended activities may not have been important to the teachers, and differentiation might not occur where standard criteria for evaluation are applied. Keith, referring to his observation that targeted students take more time, elaborate, and get more involved with the open-ended activities, commented in an interview:

I think I encourage some of that because I don't sit and say this is the standard that I want you to perform. Do this and you should be satisfied. It's more as though this is what the task is, what are you going to do?

His concerns about stating standard criteria and having students do the minimum to accomplish those criteria are echoed in the debates over the effects of minimum competencies on the performance of students identified as gifted. Also, the notion that the teachers individualize their expectations and evaluations for their students brings back the continuing difficulty to articulate the difference between individualized and differentiated instruction. By referring again to Passow's definition—"differentiating curricula for the gifted/talented is essentially a process of individualizing curricula to better match individual and group learning needs, abilities, and styles" (1982, p.6)-one can see individualized expectations for learners were applied to responses from open-ended activities. The individualization occurred by evaluating responses individually, and not by offering a different type of assignment to a particular child.

The findings raised another issue quite unexpectedly. Open-ended activities, which allowed students options in the process domain, may have contributed to grouped learning experiences in the classroom by allowing children to self-select their work partners. In other words, the quality and variability of group work was directly related to the range of abilities in the

group. No attempt will be made here to reiterate all the findings of the massive studies of ability grouping. However, one finding which is especially appropriate to mention is that "Ability grouping for enrichment, especially when enrichment is part of a within class ability grouping practice or as a pullout program, produces substantial academic gains in general achievement. critical thinking, and creativity for the gifted and talented learner" (Vaughn, 1990, as cited in Rogers, 1991. p. 2). In the context of these classrooms, children identified as gifted varied the quality of their work by working in groups with children of similar abilities. Therefore, open-ended activities that allowed for a selfselected grouping process provided a vehicle for the quality of responses to be differentiated. On the other hand, segregated groupings may have violated democratic principles in the classroom by altering the quality of learning opportunities for some portion of the student population. Thus, inclusive environments do not preclude ability grouping from taking place within the context of classroom instructional activities.

## Implications and Limitations

#### Implications of the Study

Implications of this study for practitioners are numerous. To determine how the responses to openended activities are qualitatively different, they must be assessed by using criteria contextual to the goal of the activity. The assessment issue is critical for practitioners. How identified gifted children should be graded, assessed, or evaluated has been questioned previously by VanTassel-Baska (1994):

Should the gifted be expected to do more as well as do it better? Or should they be judged according to an entirely different standard—one that gives them credit for being high achievers in a general context, and therefore does not shift its stringency pattern based on the population? (p. 69)

Teachers' value systems and assumptions about how children learn play a large role in determining the criteria and the manner in which learner responses are evaluated. The two teachers in this study evaluated students' responses relative to their expectations of the students. Although this seems to be an individualized method, questions should be raised about the role that relative assessments of some children may play in lowering the ceiling on some students' performances. Differentiation should then reflect not only whether the quality of responses are different from other responses, but whether or not the maximum amount of

student performance is exhibited. Differentiation should have an explicit conceptual meaning of maximizing a student's performance. This eliminates the need for comparing instruction or responses to other individuals. Differentiation, as it relates to maximum performance, is individual in nature. As the teachers in this study intuitively believed, the quality of the response must be judged in relationship to the student's own abilities.

To suggest that differentiation of curriculum and instruction occurs when teachers use open-ended activities, and when students' responses match students' ability levels, does not imply that curricular differentiation would not occur by using other means of differentiation, such as accelerated classes, described in the literature. It does however, challenge the belief that "When educators differentiate the curriculum. they make different knowledge available to different groups of students" (Oakes, Gamoran, & Page, 1992, p. 570). Teachers in this study facilitated differentiation. not by making different knowledge available, but by making choices available for students to pursue different content areas in different ways. Thus, educators using open-ended activities can make the same knowledge available to a heterogeneous group of students by providing choices for students to interact with that body of knowledge in ways that enable them to maximize their performances.

The emphasis on the word "different" has placed those of us in the field of gifted education in defensive positions. The belief that differentiation is synonymous with tracking or purposeful offering of "better" curriculum (Oakes et al., 1942) does not allow for the concept of differentiation to be operationalized within the context of instructional strategies within heterogeneously grouped classrooms.

#### Limitations to the Study

Examining the concept of qualitatively different as it related to open-ended activities provided new lenses for examining the nature of curricular differentiation. As a naturalistic study, I did not compare open-ended activities to other methods or instructional strategies of providing curricular differentiation. I do not infer from this study that open-ended activities provide a "better" means of differentiating instruction than other strategies that are thoroughly described in the literature (e.g., advanced content, accelerated classes, curriculum compacting).

Nor do I mean to infer that differentiation of learner responses would occur in any classroom with any teacher designing open-ended activities. These teachers were highly motivated and skilled to meet the needs of their students and to apply principles of curricular differentiation in their classroom. The teachers were selected to provide the "best case scenario." Their differences in implementing open-ended activities illuminated the complexities involved in using this strategy to differentiate instruction.

The naturalistic design of the study allowed me to see the ways that teachers used open-ended activities according to their own beliefs, patterns and styles of teaching. Designing open-ended activities was a part of these teachers' methodologies for providing interaction and engagement with various disciplines, subjects, and content areas. As was noted, when choices were provided within the content domain, some of the greatest differences in responses occurred, thus supporting the notion that the content of the activity plays a key role in individualizing and differentiating curriculum.

I agree with one reviewer who noted that this investigation did not address learning that occurred during segments of time used for journal writing, story writing, and so forth. Although learning "occurs gradually over time and is largely unobservable" (Anderson & Burns, 1989, p. 16), I believe this study implicitly addressed the contemporary view of student learning that "recognizes the interplay between the ways in which students organize their existing knowledge and the changes in that organization that are necessary to accommodate new information and experiences" (p. 42) by examining learner responses over time and relating those responses to students' abilities. I am intrigued to pursue the reviewer's insightful question, "How do we know that these forms of self-expression actually reflect learning?" (anonymous reviewer, 1996). I would urge continued studies related to the role that openended activities play in the teaching and learning process.

Studies that further explored to what extent openended activities provided teachers with knowledge about their students would be complementary to this study. In addition, it would be interesting to examine open-ended activities in relation to students with learning characteristics other than giftedness. Based on the findings, I questioned the belief that "less successful students may prefer rather than be alienated by individual worksheets, which allow them to work privately, at their own pace, on unambiguous questions with one right answer" (Metz, 1978). Although I targeted identified gifted students, many of the students that I did not target or who were not identified as gifted seemed to

enjoy activities which enabled them to work with partners, choose drawing or acting over writing, or simply express themselves in unusual ways. In this study, I did not compare whether identified gifted students enjoyed or benefited from open-ended activities more than other students.

## Summary and Conclusions: Curricular Differentiation and Beyond

I began this paper with a comprehensive review of curricular differentiation. I used the data from an investigation into the nature of open-ended activities (Hertzog, 1995) to demonstrate how responses of children identified as gifted were qualitatively different than responses to the same activities from children who were not identified by the school district as gifted. Examining student responses to open-ended activities ignites discourse about the meaning of "qualitatively different," a term that Maker (1982) suggested was value-laden and ambiguous.

In addition, the broadened conception of openended activities provided a basis to compare and discuss different types of open-ended activities. Findings revealed that differentiation of learner responses occurred even when the product involved limited student choices and was quite defined, not "open." The notion that teachers may structure open-ended activities in many ways for different instructional goals is worthy of continued exploration. Teachers may wish to vary the format of the products to allow for both nonverbal and verbal responses. This would give all students more opportunities to demonstrate their strengths and to promote opportunities for these strengths to be shared. It would be interesting to study how teacher training or awareness could enhance the ability of teachers to develop and implement openended activities for various instructional purposes.

Gifted programs have traditionally provided opportunities for students to work in their own learning styles and to pursue their own interests. About students in gifted programs, Renzulli stated:

An almost universal finding in the evaluation work I have done in numerous programs for the gifted has been that the greatest source of student satisfaction almost always resulted from the students' freedom to pursue topics of their own choosing in a manner with which they themselves felt most comfortable. (cited in Shore et al., 1991, p.107)

As a result of this study, I would advocate openended activities as a powerful teaching strategy to provide such freedom in a general education setting. I would advocate that teachers design open-ended activities for students to reveal their interests, their learning styles, and their capabilities. In that role, I believe open-ended activities have value for all learners, as well as identified gifted learners. On a more cautious note, I would urge teachers to pay attention to the choices they provide, and to the ways in which their implementation of the activity impacts student choices and responses.

In closing, I urge a continuation of the dialogue about the meaning of curricular differentiation. In the field, we must move beyond should statements and comparisons between what we give to gifted students that is different than what we provide for all students. We must better inform practitioners how the articulation of differentiation as "eliciting learner responses commensurate with gifts and talents" (Passow, 1982, p. 6) can be applied in all classrooms. We must continue to make systematic inquiries into curricular strategies that maximize students' performances.

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