

Conceptions of Giftedness

Second Edition

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The Importance of Contexts in Theories of Giftedness

Learning to Embrace the Messy Joys of Subjectivity

Jonathan A. Plucker and Sasha A. Barab

At a recent conference, a clinical psychologist who works with gifted students engaged the first author in an exciting and challenging conversation. As we discussed specific research and case studies involving gifted children, we realized that we were talking almost exclusively about the importance of context in defining and addressing giftedness. During the rest of the conference, we noticed the role of context in talent development in every session we attended. On the first author's return home, one question kept leaping into his mind: If the need to consider context comes up in most research sessions and so many practical applications, why don't we spend more time exploring its role in theories of giftedness? In this chapter, we explore the role of context in some classic and contemporary theories and models of giftedness, propose an alternative view, and explore the practical implications of that perspective.

HOW SHOULD WE CONCEPTUALIZE GIFTEDNESS AND TALENT?

Defining terms is very important in conceptual discussions such as those included in this volume. The need for precise definitions is especially critical when dealing with constructs such as creativity, intelligence, and talent, given the wide range of commonly used definitions for these terms. The discussion in this chapter relies on a definition drawn from the following conceptualization of creativity:

Creativity is the interaction among aptitude, process, and environment by which an individual or group produces a perceptible product that is both novel and useful as defined within a social context.

Plucker, Beghetto, and Dow ([in press](#)) elaborate on this definition, noting that creativity emerges from an interaction among aptitudes, cognitive processes, and influences from the environment in which an individual

or group exists. Although creativity involves latent, unobservable abilities and processes, Plucker et al. argue for the importance of generating and identifying documentable artifacts (e.g., behaviors, products, ideas) to serve as necessary evidence from which the presence of creativity can be determined and evaluated.

With respect to the construct of giftedness, it is also a construct shaped by multiple influences, and its existence is best determined in the presence of unambiguous evidence of extraordinary achievement (i.e., both novelty and usefulness) within a specific social context. With this definition in mind, the question is not, who is gifted? but rather, how can we match children to specific instructional contexts to help them realize their potential giftedness?

An example from the first author's work involves the experiences of a student during an intensive academic summer program for talented students and illuminates the role of context. The student took a course that required a great deal of group work, self-regulation, and creativity due to its constructivist, problem-based curriculum. Her performance throughout the first half of the course was very poor, and her social interactions with her peers were not constructive. The course instructors questioned how the student could have been admitted into the program, given her apparent lack of ability. But as the course intern began to work with the student, who was from an urban school district, the intern realized that the student was simply uncomfortable in an instructional setting where self-regulation was required and the social milieu was dominated by middle-class suburban students.

All definitions of giftedness imply the necessity of a social context because such a context is requisite for determining whether (and how) a person, action, or product will be defined or judged as gifted. For example, regarding creativity, Nuessel, Stewart, and Cedeño (2001) implicitly highlight social context by noting that creativity "fashions or defines new questions in a domain in a way that is initially considered novel but *ultimately becomes accepted in a particular cultural setting*" (p. 700, italics added). In this way, identifying giftedness in small children is problematic, primarily because they have not had time to exhibit giftedness yet and because giftedness does not solely exist *in* the child. There is certainly potential for giftedness in small children, but expecting real-world, gifted behaviors is a very high standard for these students to reach given the nature of the contexts that they participate in as children.

In other words, highly talented people certainly exist, but if they cannot provide evidence of that talent within one or more contexts, it does not really matter how talented they are. Put more abstractly, a tree in my region of the country is certainly falling in the ice storm that rages as this chapter is being written. However, we don't hear or see it, so we'll never know. Conceptions of giftedness place too much emphasis on the potential for

giftedness, ignoring environmental–individual interactions that form the foundation of the argument in this chapter. Rather than restrict the study of giftedness, this view allows a much broader examination of talent than normally occurs.

For example, adapting an example from Plucker et al. (*in press*), consider the giftedness of a fourth-grade student participating in a science fair versus that of a Nobel Prize–winning scientist. Taking context into account allows the behaviors of fourth-grade science projects to be judged as valid as studies of Nobel Prize–winners (e.g., this particular fourth-grade science project is exemplary in the context of fourth-graders, science fairs, or for this particular student). At the same time, specifying context does not allow for relativistic claims that a fourth-grade science project is necessarily as significant as a Nobel Prize–winning discovery (e.g., this particular fourth-grade science project is viewed as quite pedestrian when considered within the context of the projects and discoveries of Nobel Prize–winning scientists, but the distinction matters little to the fourth-grader, the scientist, and those who work with each of them).

The addition of social context to the previously discussed facets of the definition (i.e., interaction among aptitude, process, and environment; criteria of tangibility; and the combination of uniqueness and utility) provides researchers with a broad framework from which they can begin to articulate what giftedness “looks like” in light of the various stakeholders who will be evaluating gifted behaviors. Further, it treats giftedness as an observable, manifest behavior and not simply as a latent construct potentially existing within the child.

Traditional Conceptions of Giftedness

Traditional conceptions of intelligence and giftedness, ranging from general factors and related approaches (Cattell, 1987; Jensen, 1998; Spearman, 1904) to more differentiated models (Carroll, 1993; Feldhusen, 1998; Guilford, 1967; Thurstone, 1938), view the constructs as residing within the individual. Although many of these theories acknowledge the role of the environment in the development of intelligence, the focus is firmly placed on the individual as the locus of control and unit of interest. Approaches to talent development based on these traditional conceptions of intelligence are common and popular. For example, the Talent Search model initiated at Johns Hopkins University now works with more than 250,000 children per year (at varying levels of service) at several university-based regional centers across the country (Stanley, 1980; Stanley & Benbow, 1986). Many school districts around the country base their gifted education and talent development programs on the identification of high-ability children using instruments focused primarily on each individual’s capabilities (e.g., Hunsaker & Callahan, 1995).

A few contemporary approaches include reference to the environment when they discuss intellectual ability and talent. For example, Sternberg's (1985, 1986) triarchic theories of intelligence and giftedness include environmental interactions within their contextual subtheories, Ceci's (1990) bioecological approach to intelligence notes the role of context, Das, Naglieri, and Kirby's (1994) PASS theory describes specific cognitive processes that may be influenced by the environment, and Gardner (1983) emphasizes cultural context throughout various applications of his theory of multiple intelligences. These theorists discuss the role of the environment or context, yet none of them directly articulate explicit processes for how these interactions occur. When they do refer to intellectual talent, they describe a trait that exists in the individual's mind with allusions to context simply being about the application of talent – not its ontological existence. Renzulli's (1978) three-ring conception, perhaps the most well-known theory of giftedness, focuses on the interaction among above-average ability, creativity, and task commitment. Other conceptions of giftedness vary qualitatively from Renzulli's approach, but most still focus on the qualities of the gifted individual (see Sternberg & Davidson, 1986). Although these broader theories of intelligence and giftedness are much more comprehensive than earlier conceptions of ability regarding environmental factors, the focus remains on the individual during his or her interactions with the environment.

Educational approaches to talent development based on these broader theories (see Coleman & Cross, 2001; Karnes & Bean, 2001; Renzulli & Reis, 1985) are becoming more prevalent, but the traditional "find the gifted child" model remains a common approach across much of the world. These strategies, similar to the theoretical assumptions on which they are based, are predominantly focused on the individual as the unit of analysis or, more accurately, on identifying intellectually gifted children than providing environments in which they can thrive academically. In contrast, new areas of theory and research hold promise for the reconceptualization of talent development efforts.

An Alternative to Traditional Conceptions

The separation of mind and context at the heart of traditional conceptions of talent development polarizes learner and context, either implicitly or explicitly stating that, in the case of talent and giftedness, the individual impacts or influences the environment. Barab et al. (1999) have a strong reaction to this perspective, stating that "the history of such dualistic thinking reveals its inadequacies as a way of explaining thought and knowledge in that it sets up an incommensurability between knower and known, with one language to describe that which is known and another to describe the individual doing the knowing" (p. 355). Snow (1992) shared a similar

perspective, decrying the “tendency to think of persons and situations as independent variables, rather than persons-in-situations as integrated systems” (p. 19). More to the point, Snow emphasized that a more fruitful analysis would examine “the processes that connect persons and situations—the processes that operate in their interface” (p. 19, italics added). Similar perspectives are offered by Lave (1993, 1997) in her analysis of mathematics ability within and out of context. These studies, in which people perform differently in different settings when attempting to solve similar problems, challenge the validity of official competence/performance distinctions in which talent is considered to be a possession of the individual and not an outcome of persons-in-situations (Lave, 1997).

From a motivational standpoint, recent research provides evidence that the perspective of giftedness residing solely within the individual has important limitations. For example, attribution theory suggests that internal, stable attributions (e.g., I am an intelligent and talented person) may be difficult to maintain in light of challenging assignments, whereas internal, unstable attributions (e.g., I succeeded or failed because of my effort) place a greater sense of responsibility on the person-in-situation and leads to “achievement motivation” (Weiner, 1992). Conversely, students who are not succeeding can quickly descend into learned helplessness if they believe that they are not talented and will not succeed, regardless of their level of effort (Diener & Dweck, 1978). The creation and maintenance of stable internal attributions for success and failure produce further complications when the label of “good student” or “bad student” is attached to a learner. Teachers treat students differently based on teacher expectancies of student ability, often resulting in increased or decreased student achievement (Jussim & Eccles, 1995).

Advances in research over the last 20 years have further illustrated the weakness of traditional approaches to ability and talent in light of learning and thinking styles, the importance of context, and other factors (Marsh, Byrne, & Shavelson, 1988; Plucker & McIntire, 1996; Simonton, 1999, 2001; Snow, 1997; Stanford Aptitude Seminar, 2001). We know much more about human achievement than we did only a generation earlier, yet educators often use instructional strategies that are based on conceptions of talent and ability that are decades old (Bransford, Brown, & Cocking, 2000). Returning to the earlier example of the student in the summer program who felt like a fish out of water, the instructors changed the instructional environment to scaffold self-regulating behaviors, and the student performed much more effectively during the remainder of the course. The issue was not the student or the environment, but the interaction of the two.

Central to all of these criticisms is the conviction that giftedness cannot be characterized in purely cognitive terms (as internal stable traits), nor does it have a purely environmental explanation. Instead, these

perspectives imply that giftedness is the visible result of the *interaction* of individual and environment. In a similar vein, Pea (1993) believes that the ability to act intelligently is accomplished rather than possessed. This perspective draws heavily on the research in ecological psychology (Gibson, 1979/1986; Turvey, 1992; Turvey & Shaw, 1995), situated cognition (Bredo, 1992; Greeno, 1997; Lave, 1997), distributed cognition (Barab & Kirshner, 2001; Cobb & Yackel, 1996; Pea, 1993), apprenticeship learning (Lave & Wenger, 1991), and psychoanalytic theory (Stolorow, Atwood, & Orange, 2002).¹

This conceptualization appears to be at odds with popular systems theories of creativity and related constructs, and it is. For example, Csikszentmihalyi (1988; see also Csikszentmihalyi & Robinson, 1986) provides a systems theory of creativity that emphasizes the roles of individuals and the domain and field in which they are attempting to create. Rather than consider how an individual operates within a domain and field, we believe a better perspective is to consider how operating within the domain and field fundamentally change how one thinks and acts. We see similar phenomena within education policy research.

For example, in debates on the effectiveness of full-day kindergarten versus traditional half-day programs, policy makers often say that “It’s not full-day kindergarten that matters, it’s what *happens* in full-day kindergarten that matters.” That statement provides a great sound bite, but it fundamentally misinterprets the research on teacher behaviors within full- and half-day programs: Research provides evidence that teachers, given the additional time in full-day programs, not only do more of specific instructional strategies but also use different instructional strategies (e.g., Denton, West, & Walston, 2003; Elicker & Mathur, 1997). The changing environment changes everything, including the way teachers perceive the environments and interact with students. The person–environment interaction has a more pronounced influence on behavior than either individual or environmental factors can explain in isolation.

In an earlier, related analysis (Barab & Plucker, 2002), we briefly reviewed the potential contributions of this conceptualization of talent development, with an emphasis on design challenges faced by educators who seek to foster emerging excellence (i.e., giftedness). We summarized our perspective with the statement “nobody has talent, yet everybody has the opportunity to engage in talented transactions” (p. 179). Our hope was that educators would come to characterize entire contexts as gifted and develop educational innovations that support learners in functioning as part of, and creating, such contexts. We concluded by stating that educators

¹ The contributions of most of these theoretical perspectives are discussed in detail in Barab and Plucker (2002).

must support the development of smart contexts and not simply that of smart individuals.

Since that article was published and in ensuing conversations with colleagues, our view has moderated slightly. We would now say that *anyone can be talented, yet one needs the opportunity to engage in talented transactions to realize their giftedness*. Talent is potential, but – returning to the definition of giftedness – we need to see evidence of novel, useful accomplishment to determine the presence of gifted behaviors. In our schools, our goal should be to design those environments that provide students with opportunities to develop talents with the eventual goal of producing evidence of giftedness.

HOW DO WE DEVELOP TALENTS CONTEXTUALLY?

A major problem with situated theories is that they sound good in theory, but they are rarely (and ironically) applied to realities faced by teachers and students in classrooms.² In the remainder of this chapter, we attempt to show what an applied situated perspective for developing talent and achieving giftedness could look like, with attention to compromises that are necessary for this approach to succeed in our schools.

Identifying Talents

Standardized ability and achievement tests are very good at identifying certain types of (usually decontextualized) potential, but they tell us very little about giftedness, in large part because they examine behavior out of context. Context-laden conceptions of giftedness would tend to view gifted behavior as the best indicator of giftedness. If apparently talented children are not producing gifted behaviors, educators and parents should be examining which opportunities are necessary for students to interact in environments that foster gifted behaviors.

A common reaction to this position is, “Well, that works great in philosophy land, but I have a school of 500 children and can only provide gifted education services to a small percentage of those students.” In general, we would argue that the limited resources would be better spent differentiating curriculum within each and every classroom, with special attention to the instructional techniques discussed in the [next section](#).³ But even within

² Most published examples describe short-term interventions or extracurricular applications. These are often excellent, provocative programs, but they have little impact on day-to-day activities in our schools.

³ Or at least the use of flexible approaches to identification, such as those encouraged by the Schoolwide Enrichment Model.

the realities of formal identification procedures, the importance of context can be addressed.

For example, much has been written about the need for multidimensional assessments (e.g., Machek & Plucker, 2003), which consider multiple objective and subjective assessments of ability and achievement when identifying gifted students. A problem with these identification systems is that they often collect a range of interesting and relevant data, only to heavily weight standardized test scores, rendering the interpretation of the additional data moot. As a former enrichment program coordinator, the first author understands the reliance on tests scores: They are reliable, relatively easy to interpret (especially if drawn from norm-referenced tests), and provide an easy way to rank students. But we have become convinced that the messy nature of subjective measures, such as performance assessments and teacher, parent, peer, and self-nominations, is their greatest strength – acknowledging the subjectivity of such measures is an implicit acceptance of the role of context. For example, if 10 children in a specific school have high ability and high scores on achievement tests, and are consistently mentioned on teacher ratings and recommendations, educators will have little problem establishing the reliability and validity of their gifted identification process. However, if two or three students have decent scores, only occasionally score well on teacher rating scales, yet have exceptional samples of work in their portfolios, the conception of giftedness explored in this chapter suggests that second group of children are no less talented than the first group and would perhaps view the second group as providing evidence of giftedness, whereas the first group has not yet provided such evidence.

Instruction for Giftedness

Given the interactive framework proposed in this chapter, classrooms are not the location of talent development but rather the context for a specific cultural milieu through which students develop understandings of what constitutes a talented interaction – an interaction that is partly defined and validated in terms of the day-to-day practices and rituals of the school culture. As a result, educators need to select carefully the daily rituals and activities so that students learn skills and participate in practices that are consistent with those environmental and sociocultural structures and processes outside of schools. This idea is commonly associated with the work of Dewey (1925/1981, 1938), Whitehead (1929), and others, and remains as applicable today as it was roughly 100 years ago.

Barab and Plucker (2002) note that this approach has considerable potential for motivating students. Although some students are able to motivate themselves and regulate their intellectual behaviors regardless of context, most students are divorced from the curriculum because of a

lack of applicability or challenge, which often manifests as appearances of boredom (Csikszentmihalyi, 2000; Plucker & McIntire, 1996). To address this problem, Barab and Plucker suggest that

Drawing on his expertise, the educator is responsible for initiating the learner into those practices and meaningful relations that are reflective of the types of relations occurring in the culture at large. This initiation cannot be handed to the learner or the student all at once. Rather, this coupling must emerge from individual–environment interactions. Student-owned – not textbook- or teacher-owned – interactions provide meaning and value to the subject matter, and build connections to the learner’s life and activity more generally. (p. 175)

Barab and Plucker (2002) further stated that this learner–environment interaction is the avenue through which children produce evidence that they are gifted. But how do we accomplish this blending of child and instructional environment? One alternative is classroom-based, problem-based learning (PBL). One interesting approach is that of anchored instruction, instruction in which the material to be learned is presented in the context of a specific problem that serves to provide meaning to the material. Further, by immersing the material in a larger context, the instruction allows the material to be examined from multiple perspectives (Barab & Landa, 1997). The Cognition and Technology Group at Vanderbilt (CTGV; 1990, 1993) is given much of the credit for developing anchored instruction within the context of technology-delivered problem-solving opportunities. A similar example is the use of Web design tasks with college students (Lim, Plucker, & Bichelmeyer, 2003). By anchoring specific content within the task of designing a Web page, students gain a greater understanding of the material as they organize and modify the information to be presented on the Web site.

A specific example within gifted education involves high school students participating in a summer program on invention and design (Gorman & Plucker, 2003; Gorman, Plucker, & Callahan, 1998; Plucker & Gorman, 1999). Students in this context were told that the historical setting for the class was immediately before Alexander Graham Bell filed his telephone patent in 1876, and they were asked to work in groups to design a telephone, build a working prototype, write a patent application, and present and defend their design and prototype to a person acting the role of a patent examiner – a role undertaken by an inventor from AT&T. Students had access to a variety of materials, most of which would have been available to inventors around the time of the Bell patent, and they were also provided with access to various patents, notebooks, and paperwork from many of the inventors who worked on voice transmission technology in the late 1900s. Most of the students had little knowledge of circuit design, the physics of sound, and other important content. The instructor, an experienced physics teacher, circulated among

the groups and delivered mini-lectures on these topics to students who appeared to need the information. The teacher occasionally stopped all the groups and delivered a 20- to 30-minute just-in-time lecture on content with which most of the class was having difficulty. These lectures were infrequent, and the teacher usually imbedded the content in a historical context, which added further to the real-life application of the creative skills and content.

Other approaches to PBL include Type III activities within the framework of the Schoolwide Enrichment Model (Renzulli & Reis, 1985) and less formal approaches recommended by Savery and Duffy (1996), Plucker and Nowak (2000), Grow and Plucker (2003), and many others. Renzulli (1994) has recently taken this model a step further, encouraging schools to use his contextual approach as a comprehensive school reform model, which is a promising development from our theoretical perspective. Barab and Duffy (2000) offer a very provocative approach to creating “communities of practice,” arguing that such situated communities cannot be modeled – real-world contexts need to be situated in the real world. This position seems a bit extreme and, frankly, untenable in most of today’s classrooms; a more realistic option, neither ideal nor utopian, is the classroom-based approach described previously. In general, research on PBL effectiveness is positive, although more research is needed on how applied, contextual approaches to teaching and learning impact student performance on standardized achievement tests, such as those used in every state’s federally mandated educational accountability system.

Educational Assessment and Giftedness

Instruction and assessment, although traditionally discussed as separate techniques or areas of interest, are highly interdependent. Consequently, we should not be surprised to find the same learner-as-unit-of-interest emphasis in the history of educational assessment (see Brown, 1992; Schoenfeld, 1992; Snow, 1997; VanTassel-Baska, 1998). Using assessments that respect local context are essential if we are to have valid interpretations – both ethically and empirically – of what constitutes gifted transactions (Barab & Plucker, 2002). Furthermore, our assessment strategies need to be consistent with the nature of instruction in the context of interest (Nowak & Plucker, 2002). For example, assessing problem-based instruction with a context-free pencil-and-paper multiple-choice exam is hardly conceptually or instructionally consistent, nor is the use of problem-based, context-bound assessments to measure student progress during traditional, lecture-recitation instruction.⁴

⁴ Refer to Nowak and Plucker (2002) for additional examples and guidelines for assessment in problem-based learning.

One other area of assessment, heavily context-dependent, is the importance of allowing students to present and defend their intellectual work. Few areas of human activity are as neglected in the classroom as constructive criticism, both in terms of providing such criticism and learning to use such criticism to improve one's work. Within the context of creative production, the first author thinks of this process as *creative articulation*. Before describing this concept, we would like to share the following anecdote about the power of criticism.

Within one section of our program's doctoral qualifying exams, students are required to critique one theoretical or conceptual article in 3 hours. The students often provide responses that read like book reviews, merely summarizing the authors' main points, or that are uniformly positive or negative, with little balance in the true sense of a critique. We meet with many of these students both before the exam, to emphasize the need to critique, and after the exam, to debrief our assessments of the students' work. During these meetings, it often worries us that the students do not understand what we mean by *critique* or even *criticize*. As a result, students may not be able to achieve the goal for this section of the exam, which is to provide evidence that they can take information from their courses and apply it in a common academic context: critiquing someone's ideas.

This situation strikes us as a failure on our part, as educators at every level of instruction, to pay sufficient attention to the criticism's importance in most areas of human activity.⁵ Research on human creativity is replete with examples of eminent creators persuading critics and other stakeholders of the benefits of the creators' approaches to specific problems. For example, Gardner's (1993) profiles of several major creative figures, including Gandhi, Freud, and Martha Graham, contain several references to these individuals' ability to use criticism to their advantage and persuade their audiences that the creators' particular solutions were valuable (see also Latour, 1987).

Although the literature contains a few examples of classrooms with cultures of critique (e.g., Brown et al., 1999), how often do we allow students to persuade their classmates and teachers about the quality of their work? Unfortunately, the answer in most classrooms is that educators do not create this type of environment. By not doing so, we continue to rob learning of context, creating an instructional misalignment in which work results from person-environment interactions, yet assessment continues to exist under the guise of context-free objectivity. An alternative is, during assessment, to embrace context in all of its complex, messy, and challenging glory, engaging children in the activity of argumentation as they attempt

⁵ This problem is obviously not restricted to graduate students. Indeed, researchers often complain that few journal reviewers know how to provide constructive criticism.

to ground their claims in credible and trustworthy arguments (Toulmin, 1958). When students learn in context-rich PBL environments, they are afforded the opportunity to present and defend their work to the class, help their peers learn to provide constructive criticism, and allow the presenters the opportunity to revise their work and present it back to the group (e.g., Barab, Hay, Barnett, & Hay, 2001; Gorman et al., 1998). The result will be students who seek out opportunities to receive criticism, articulate the value of their work, and engage in a dynamic social conversation about their achievements.

CONCLUSION

In this chapter, we have attempted to illustrate the power of situated person–environment interactions as models for talent development. The major advantage, in our view, is the acknowledgement that context is critically important both to understanding giftedness and to developing giftedness in young people. We also addressed a weakness of many situated approaches to learning and knowing by providing concrete suggestions for applying this perspective to everyday educational situations.

However, we have not addressed another weakness of using a lens of situated cognition to view talent development and giftedness: the lack of a major theory that explains how specific contexts interact with certain abilities and dispositions to produce specific outcomes. We believe several major theorists are headed in the right direction (e.g., Csikszentmihalyi, 1988; Renzulli, 2002; Sternberg, 1985), but these perspectives tend to be trait-focused rather than state-focused and lack testable outcomes that can be predicted from specific contextual variables. A theory with these characteristics may not be possible at this moment in time – admittedly, such a theory is largely absent from broader discussions in education and psychology – but a specific, testable theory of context in the development of gifted behaviors should be a goal of theorists and researchers.

In summary, we propose that adults view children with potential as being talented, with our goal as educators being to design social contexts in which these talents can emerge as gifted behaviors. Although it is tempting to identify specific individuals as “gifted” in the absence of exceptional real-world achievement, doing so ignores the situated and dynamic nature of human accomplishment. Exclusivity (i.e., these students are gifted, these others are not) is a logical extension of the individual-as-processor approach to giftedness, whereas the human–environment perspective is more inclusive due to the emphasis on finding optimal environments in which students can develop their talents into truly gifted behaviors.

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