Gifted Learners’ Epistemological Beliefs
Marion Porath¹*, Judy Lupart², Jennifer Katz¹, Constantine Ngara¹ and Pamela Richardson¹

Abstract: This paper focuses on gifted children's and adolescents' narrative interpretations of learning using a neo-Piagetian theory of conceptual development (Case, 1992; Case & Okamoto, 1996) as a framework. Children's narratives develop from action based reasoning to intentional reasoning that incorporates understanding of their own and others' mental states. In adolescence, thinking becomes more interpretive, with a focus on the psychology of individuals involved. Similarly, understanding of learning develops from a focus on the activities of school (e.g., reading, math) to interpretation of the meaningfulness of different learning activities and the meaning of knowledge itself. Students' narrative accounts of learning are used to articulate the development of epistemological beliefs across childhood and adolescence.

Keywords: Learning, conceptual development, giftedness, epistemological beliefs

There are significant gaps in our knowledge of how children understand the educational enterprise, and of how this understanding may impact their adjustment to school and realization of their talents. In particular, it is imperative that we understand how children with significantly developmentally advanced ability profiles understand their own learning. Familiar norms do not apply to these children. Significant adaptations need to be made to curricula and educational programming to meet their needs (Robinson, Zigler, & Gallagher, 2000). Listening to children and providing environments and educational strategies that engage them in understanding and directing their own learning are critical to the notion of "gift-creation" advocated by Hymer (2009) and Huxtable (2009) and consonant with the vision of contemporary classrooms where growth, enquiry, and personally relevant education are the focus (Hymer, Whitehead, & Huxtable, 2009).

Harter (1996) pointed out how important it is to know how children perceive different aspects of school life, in order that we can take these perceptions into account in supporting them through the school years. However, education typically disregards learners' perspectives on knowledge and their understanding of their capacity for learning (Bruner, 1996). Children are thinkers (Bruner) with competent and legitimate ways of making sense of the world. Children's understanding of learning is a necessary starting point for pedagogy. Children's understandings are rarely engaged in this way, but when they are, the result for children is deeper and more meaningful learning (Bransford, Brown, & Cocking, 2000; Fosnot, 1996; Griffin & Case, 1996; McKeough, 1992). Epistemic beliefs, or beliefs about knowledge and knowing, are related to self-regulated learning and achievement (Muis, 2007) and intellectual performance (Kuhn, Cheney, & Weinstock (2000).

What do children understand about learning and knowledge? This paper investigates the epistemological beliefs of gifted learners, concentrating on how they understand the relationship between themselves as knowers/learners and knowledge (Burr & Hofer, 2002). Following Burr and Hofer, ‘personal epistemology’ is the focus rather than ‘epistemology’ in the philosophical sense.

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Research on epistemological beliefs has been conducted primarily with adults and some hypothesize that epistemological reasoning is not possible before the acquisition of formal thinking (Hofer & Pintrich, 1997). There may, however, be developmental precursors to epistemological thought, with abstract conceptions building on first thoughts about what it means to learn, as suggested by Burr and Hofer (2002), Kitchener (2002), and Kuhn et al. (2000). Very little research has been done on children's epistemological beliefs; the "origins of epistemological awareness" (Burr & Hofer, p. 200) are not well understood. Studies on children include Burr and Hofer's study of 3- to 5-year-olds focused on the relationship of theory of mind and epistemological beliefs and Kuhn et al.'s studies of 7- and 8-year-olds and 10-year-olds. The former suggested a relationship between ability to predict and justify what others will think and do and theory of mind ability characterized by development from inability to do either set of tasks, to the ability to predict and justify in a relevant way, to the ability to coordinate both abilities successfully. Burr and Hofer saw their study as only beginning to address a critical developmental connection and call for more fine-grained, developmental studies that investigate process. Similarly, they note the need to connect such studies to education, highlighting that another gap in our understanding is that learners' beliefs and the school context have not been linked in any practical way (Ziegler, Stoeger, & Mundi, 2004). Kuhn et al.'s work, while tangentially related to education in its articulation of development of conceptions of knowledge from childhood to adulthood, also does not address the educational implications of the influence of different views of knowledge on the process of learning.

Mansfield and Clinchy's (2002) study focused on children aged 10, 13, and 16, finding an increasing ability to coordinate events with the "inner worlds of individual knowers" (p. 225). While they included a vignette featuring a teacher, the focus was on justifications for why the child thought the teacher was nice or mean. Their identification of the age-related increase in complexity and nature of epistemological position is important in understanding the general nature of epistemological development but needs practical translation to be meaningful in schools and the education of gifted learners.

A Neo-Piagetian Perspective on the Understanding of Learning

Neo-Piagetian theory is the framework for the work presented in this paper. Neo-Piagetian theories allow for the mapping of "precise changes in the development of academic skills and understandings" (Mascolo, Li, Fink, & Fischer, 2002, p. 120). Because of its articulation of the structure and content of children's representations of the academic and social dimensions of school, and the developmental course of these representations, Case's (1992; Case & Okamoto, 1996) neo-Piagetian theory provides an appropriate framework for this study. Case (1992) described children's central conceptual structures in a number of domains (mathematical, spatial, social narrative; see Case & Okamoto, 1996). These structures are "blueprints" of children's understanding, the internal mental entities that consist of the relations among a number of concepts. Because the relations are semantic, articulating the meanings children assign to concepts, structures are conceptual. Structures are considered central to a domain because they form the basis for understanding a wide range of related tasks within that domain.

Studies of gifted learners framed within Case's (1992) neo-Piagetian theory have found development to be relevant to the level of conceptual understanding they demonstrate (see, for example, McKeough, Genereux, & Jeary, 2006; Okamoto, Curtis, Jabagchourian, & Weckbacher, 2006; Porath, 2006). That is, maturation is a factor in the level of conceptual complexity demonstrated, even among highly able learners, when responses are considered from the perspective of central conceptual structures. For this reason, work with children who represented a typical range of abilities was used to inform this study of gifted learners’ conceptions of learning.
Children's conceptions of learning. Bickerton (1994) articulated a developmental progression in how children understand learning, using Case's (1992) theoretical model. This research provides a basis for determining the sort of understanding that may be central to children's conceptions of academic tasks. Bickerton asked elementary school children what learning means, and what happens when they learn. She found that children's understanding of the meaning of learning develops in the following manner.

- **Four-year-olds** think of learning as *behavioural events* (e.g., playing, going to school, building a tower). They also think of learning as involving the presence of a "learning agent," such as Mom or Dad.
- **Six-year-olds** define learning as a relationship between a *behavioural event* and an internal state. Internal states include thoughts, feelings, and judgments. For example, "If I do good work, I get happy." "Sometimes learning gets me frustrated because I make so many mistakes" (Bickerton, pp. 6-7).
- **Eight-year-olds** are able to relate a *behavioral event* to two internal states when defining learning. "You get better at it if you try your hardest" (Bickerton, p. 7).
- **Ten-year-olds** add a personal element to their definitions of learning. "To me, learning means knowing how to do something without having any problems doing it (Bickerton, p. 7).
- **Twelve-year-olds'** responses are more psychological in nature, recognizing "states of mind" as important in learning. "Learning is developing a smarter mind." "Learning is knowing and understanding things you didn't know before" (Bickerton, p. 8).

Bickerton (1994) conceptualized children's understanding of learning as related to narrative thought, that is, as one of the understandings related to a central social narrative structure (Case & Okamoto, 1996; McKeough, 1992). Children's responses clearly reflected human action and motivations related to the social context and traditions of schooling and education more broadly defined; they were making meaning of their learning experiences.

As children enter the world of formal schooling, they face exceptional demands to make meaning of their experiences, including understanding their own learning and why others behave the way they do. Bruner (1986) described meaning making as the simultaneous construction of two landscapes.

One is the landscape of action, where the constituents are the arguments of action: agent, intention, or goal, situation, instrument.… The other landscape is the landscape of consciousness: what those involved in the action know, think, and feel, or do not know, think or feel. (p. 12).

In a similar vein, Perner (1991) stated, "Mental states need to be systematically linked to externally observable events" (p. 101).

**Method**

This study focused on gifted children's perspectives on learning. The task and analyses reported are from a larger study focused on gifted children’s understanding of learning and teaching, their learning identities, and social aspects of education (Porath & Lupart, 2007). Eighty-one students from Grades 1 through 12 (43 boys; 38 girls) identified as gifted participated in the larger study. Seventeen of the participants were enrolled in a 2-year program that facilitated early entrance to university (11 in Year 1; 6 in Year 2). All grades except 8, 9, and 11 were represented in the sample. (Canada's school systems comprise twelve grades, preceded by kindergarten.) The study included public and parochial schools in two large western Canadian cities. The students were identified in different ways, as is characteristic across school districts in western Canada. Identification strategies included combinations of teacher nomination, superior academic achievement, and/or superior intelligence or cognitive ability test scores. The participants attended a variety of programs for gifted learners, including segregated classes and pullout programs.
Table 1. Development of Thinking about Learning

<table>
<thead>
<tr>
<th>Level</th>
<th>Nature of thought about learning</th>
<th>Examples</th>
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<tbody>
<tr>
<td>1</td>
<td>• Action-based</td>
<td>You do a lot of new things; “doing stuff”; brain is remembering all that stuff</td>
</tr>
<tr>
<td>2</td>
<td>• Gaining knowledge through a variety of modes and learning in different ways • Understanding/meaning is key • Rudimentary notion of knowledge • Future-oriented • General idea of brain’s role in learning</td>
<td>To do ... no, not to do but to think about what something means. Learning can mean different things like my one example is probably you can learn about yourself, like what... yourself means to you, what is really inside you... or you can learn knowledge based like... math, and reading, and drawing, PE, all sorts of learning ... to do with knowledge well actually PE isn't to do with knowledge but whatever ... and... I guess learning can also mean learning about... relationships like sometimes you might have problems with your friends like you might get into a fight but you always learn from your mistakes... so... I think that's what learning means.</td>
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<tr>
<td>3</td>
<td>• Acquisition of competence – increasing knowledge; learning new things • Awareness of interests, weaknesses, boredom, curiosity • Multiple modes of learning • Learning as continuous</td>
<td>I’m finding out new things, researching things, and ... basically passing on what others have learned. It doesn’t always happen to a kid. Learning doesn’t stop when you become an adult, so being a scientist ... it’s always learning new stuff.</td>
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<tr>
<td>4</td>
<td>• Links you to knowledge traditions • Transformative • Awareness of the breadth of learning (variety of sources, vicarious learning)</td>
<td>Learning to me means to find new things, new understandings of things. You absorb information from others and you try to use it in your own life.</td>
</tr>
<tr>
<td>5</td>
<td>• Views of learning and knowledge related to personal preferences and goals • Recognition of ideas and different perspectives on knowledge • Characterization of learning as abstract • Recognition of neuropsychological factors in learning (perception, associative learning)</td>
<td>Changing behaviour through experience and applying the knowledge. It’s a function of mind. There is a spark when you are happy about what you are learning, asking questions, and making your own connections. It’s interesting to learn new things and open your point of view. Putting information together to see if it can be combined to come up with an idea.</td>
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Conceptions of Learning

This task was the first of a series of research tasks completed by the participants. Each child participated in an individual semi-structured interview, using the questions below as a framework for discussing their perspectives on learning. Their responses were recorded and transcribed for analysis.

- What does learning mean?
- What is happening when you are learning?
- Where does learning come from? (Bickerton, 1994)

Coding guidelines for responses to the first two questions were devised based on inductive analyses of children’s responses and Case’s (1992) theoretical framework. The
scheme also drew on McKeough’s (1992; McKeough & Genereux, 2003) work on development in the narrative domain, viewing learning, generally and specifically, as an intentional act focused primarily on knowledge acquisition during middle childhood and an interpretive epistemological act in adolescence (Table 1). Coding guidelines were the result of an iterative process in which data were examined in light of Case’s (1992) neo-Piagetian theory of development; prototypical characteristics of stages in child and adolescent development defined; and children’s best responses assigned to a level of development. Coding was done first by four individual coders who were research assistants on the project; codes were then compared and discussed in pairs; the final stage involved comparing and discussing codes in the group of four to reach consensus. The process used was a “constructivist revision of grounded theory” (Henwood & Pidgeon, 2003, p. 134); the data guided interpretation within the conceptual framework of developmental theory using the steps of open coding, constant comparison, and theoretical integration (Henwood & Pidgeon). Analyses were primarily qualitative in nature. However, following other neo-Piagetian studies, a numerical score was assigned to levels of development and used in a statistical analysis of developmental trend.

Responses to the question regarding the source of learning were content analyzed, focusing on whether the source was external, internal, or a combination of the two and the degree of sophistication evident in the response. This analysis was also informed by Case’s (1992) theory of development; however, no numerical scores were assigned.

Results

Development of Conceptions of Learning

Participants were grouped by grades; these groupings approximated the age ranges specified by Case (1992) for each of his hypothesized developmental stages (Grades 1 and 2, n=6; Grades 3 and 4, n=12; Grades 5 and 6, n=24; Grade 7, n=12; Early Entrance 1 and 2 with Grade 10, n=23; and Grade 12, n=4). Mean (SD) learning scores by group are reported in Table 2. Learning scores were analyzed for age effect using a one-way ANOVA. A significant between groups effect was found, F(5, 76)=6.73, p=.000. The linear trend was significant, F(1,80)=26.02, p=.000, with no significant deviation from a linear trend, F(4,77)=1.90, p=.119. Post hoc comparisons were not done due to the unequal group sizes.

Table 2. Mean (SD) learning level by age group

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean age (SD) in months</th>
<th>Learning level</th>
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<tbody>
<tr>
<td>Grades 1 and 2</td>
<td>93.67 (7.66)</td>
<td>1.50 (.45)</td>
</tr>
<tr>
<td>Grades 3 and 4</td>
<td>109.42 (8.10)</td>
<td>1.83 (.62)</td>
</tr>
<tr>
<td>Grades 5 and 6</td>
<td>124.75 (6.16)</td>
<td>2.40 (.64)</td>
</tr>
<tr>
<td>Grade 7</td>
<td>145.17 (3.07)</td>
<td>2.54 (.72)</td>
</tr>
<tr>
<td>Early entrance 1 and 2; Grade 10</td>
<td>176.35 (8.49)</td>
<td>3.15 (1.07)</td>
</tr>
<tr>
<td>Grade 12</td>
<td>204</td>
<td>2.38 (.85)</td>
</tr>
</tbody>
</table>

*Average age is an estimate based on the usual age of Grade 12 students. Age for these students was not noted during data collection.
Children's responses form a developmental progression generally related to age, as illustrated in Table 1. The youngest children understand learning as “doing stuff” and learning new things. Children in the middle grades of elementary school understand learning as acquisition of knowledge that is important to them in the future and as more than just academic. Learning makes one conscious of one’s own interests. Children of this age also have a rudimentary understanding that meaning is important in learning. Without meaning, learning is boring. In pre-adolescence, there is recognition of the competence that comes with learning, the link to established knowledge, and the human drive to learn.

Early adolescent participants talked about learning as a transformative experience (“You think in ways you didn’t before) and their emergent place in a knowledge tradition. Some of the oldest participants, in particular students from the program designed to support early entrance to university, demonstrated sophisticated epistemological beliefs – epistemic inclination (one must be interested and willing), epistemic acquisition (the availability of knowledge and its perceivability), and attributes of the perception (its certainty and the uniqueness of the perception) (Ziegler et al., 2004). They began to play with notions of the relativity of knowledge and unique ideas that emerge when individual perceptions interact with established knowledge domains, although these ideas were not yet well formed.

Sources of Learning

Children's attributions for the sources of learning developed from external sources, often with little relationship to learning, in young children to a blend of internal and external sources later in middle childhood. Through adolescence a trend was observed that saw movement from primarily internal to primarily external to a blend of the two, all in more sophisticated statements that reflected growing recognition of the complexity of learning (Table 3).

Table 3. Developmental Progression in Attributions for the Source of Learning

<table>
<thead>
<tr>
<th>Developmental Stage</th>
<th>Source</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle childhood - Early primary school (Grades 1 and 2)</td>
<td>External</td>
<td>Scientists, teachers and other smart people; the government</td>
</tr>
<tr>
<td>Middle childhood - Elementary school (Grades 3 to 6)</td>
<td>Internal and external</td>
<td>Some learning comes from your brain and some learning comes from experiences.</td>
</tr>
<tr>
<td>Early adolescence (Grade 7)</td>
<td>Internal</td>
<td>I think learning comes from our instincts. We just have to keep exploring new things. That’s what drives evolution.</td>
</tr>
<tr>
<td>Adolescence I (Early entrance and Grades 10 and 12)</td>
<td>External (more sophisticated notions)</td>
<td>Life itself provides a huge learning opportunity. I think it can come anywhere.</td>
</tr>
<tr>
<td>Adolescence II (Early entrance and Grades 10 and 12)</td>
<td>Internal (more sophisticated notions) and external; interaction between brain/mind and environment</td>
<td>Your brain senses because you need to understand. Biologically, there are associations of stuff - what we see, perceive, think.</td>
</tr>
</tbody>
</table>
Discussion

While the research was limited by unequal sample sizes, with few participants at the youngest and oldest points in the age range, and the cross-sectional design, it provides a beginning to articulating how gifted learners think about learning and knowledge. The youngest children’s responses suggest that there are developmental precursors to epistemological beliefs and that these earliest understandings lay the foundations for more sophisticated understandings of learning and knowledge. As the research was conducted in school settings, a bridge was made to what learning and knowledge mean to children in schools, contributing to our knowledge of how personal epistemologies are relevant to school learning. The children’s responses also offer insight into how some of our brightest students conceive of learning.

Understanding of Learning: A Social Narrative or Epistemological Structure?

Children’s understanding of learning can be conceptualized as part of a central social narrative structure. It is concerned with making meaning of actions, understanding one’s own intentions with regard to learning, and in adolescence, interpreting one’s learning in the context of knowledge traditions. However, understanding of learning may be broader than the domains conceived by Case as having unique conceptual and operational structures (Case, 1992; Case, Demetriou, Platsidou, & Kazi, 2001). In Case’s system, central conceptual structures have been proposed in the domains of number, spatial representation, and social narrative.

These structures (1) represent the core content in a domain of knowledge, (2) help children to think about the problems that the domain presents, and (3) serve as a tool for the acquisition of higher order insights into the domain in question. (Case et al., p. 328)

Children’s understandings of learning, while they can be explained by a central social narrative structure, appear to be relevant to other central conceptual structures as well.

A central epistemological structure might be proposed. However, given the domain-specific nature of central conceptual structures, a central epistemological structure, to be theoretically consistent, would need to explain understandings in a delimited domain of understanding. Understanding of learning appears to entail a more general conceptual understanding. It may be that beliefs about learning are processes that underlie or interconnect (Case et al., 2001) central conceptual structures. Case’s (1992) executive processes or Demetriou, Efklides, and Platsidou’s (1993) hypercognitive system, for example, entail self-understanding and self-regulation. These “enable the thinker to select and organize the particular computations and concepts required by a task addressed to any of the specific domains or to any combination of them” (Case et al., p. 322). These constructs resemble the reflective abstraction that was, for Piaget, a central developmental process (Campbell, 1993). Analysis of the relationships of these beliefs to children’s conceptions of themselves as learners in different academic disciplines (reading, writing, and mathematics) suggests strong parallels with the development of understanding of learning (Porath & Lupart, in press), providing some support for understanding of learning and oneself as a learner as a central developmental process, an underlying mechanism for children’s understandings of learning in general and academic subjects in particular. Epistemological beliefs are concerned with making meaning of school, understanding one’s own intentions with regard to learning, and interpreting one’s learning in the context of knowledge traditions. These beliefs develop from action-based understanding of the educational endeavour to the awareness of personal preferences and needs and, ultimately, to sophisticated reflections on the nature of knowledge and one’s role in knowledge development.

Educational Implications

Understanding the epistemological underpinnings of students’ approaches to learning and academic subjects can help educators to support students to consolidate their
current constructions of learning and move them forward to more sophisticated constructions (McKeough, Okamoto, & Porath, 2002). Appreciating and supporting the foundations of learning in this way may contribute to students achieving richer and deeper knowledge of academic disciplines. Mansfield and Clinchy (2002) support this approach, arguing that teaching should start from students’ perspectives on what is to be studied, allowing for personal meaning to be considered in education. Through helping students to consolidate their understanding and then supporting them to build bridges to more sophisticated understanding, teachers also provide students the support necessary to achieve optimal levels of understanding (Kitchener, 2002). Without this support, their understandings, even those of the brightest students, can remain at a functional level (Kitchener).

**Directions for Research**

This study provides a starting point for continued exploration of gifted learners’ epistemological beliefs and the role those beliefs play in achieving excellence. Further research could take a longitudinal approach, tracking students’ growing sophistication in beliefs about learning and knowledge. Fine-grained analyses of process, such as can be accomplished with microgenetic analysis that examines changes while they occur during instruction, could provide knowledge about what instructional strategies and supports facilitate development. The fine-grained and intensive examination of processing that microgenetic analysis allows can provide suggestions about cognitive change mechanisms relevant to personal epistemology and indicate directions for extension of instructional models (McKeough & Sanderson, 1996; Pellegrino, Chudowsky, & Glaser, 2001). It facilitates the tracking of developmental processes from “specifiable beginnings” (as described by central conceptual understanding) through increasingly competent approximations to a more sophisticated understanding (Catan, 1986). Importantly, this tracking of process would take place in the context of learning more about what children have to tell us about their perspectives on themselves as learners and their views of knowledge.

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**References**


Case, R., & Okamoto, Y. (1996). The role of central conceptual structures in the development of


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