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Developmental Aspects of Giftedness Within the Actiotope Model: Implications for Chinese Students

**Marion Porath
Faculty of Education
The University of British Columbia
Vancouver, Canada**

marion.porath@ubc.ca



Overview

- Importance of the Actiotope Model of Giftedness (AMG)
- Why incorporate a developmental perspective?
- Importance of conceptual learning
- Neo-Piagetian developmental theory
- An example: Artistic development – Wang Yani
- Discussion and educational implications



The AMG's Contributions

•“Big picture” of how the development of excellence can be traced

- Coherence
- Potential for cross-cultural application of the model

•AMG notes the importance of individual actions and environmental variables in achieving excellence

•Emphasis on

- individuals in context
- relativity of judgments about what constitutes excellence
- co-evolution of components of the model



Developmental Theory and the AMG

- **Congruent with the AMG's foci on the dynamic nature of ability**
- **Importance of understanding the nature of pathways to excellence**
- **Focus on action repertoires that are conceptual in nature**
 - Conceptual learning is vital in the journey toward excellence (Ziegler, 2005)
 - Developmental theory provides details on the nature and developmental course of conceptual action repertoires



Why is Conceptual Development Important?

"Conceptual glue" vs. "knowledge in pieces"
(diSessa, 1988; Porath, 2006a)

- Central conceptual understandings are the framework within which to apply skills
- Result is integrated, cohesive, and complex knowledge structures
- Knowledge structures of experts are complex
- Experts' knowledge structures are brought to bear on a variety of related problems



Case's (1992) Neo-Piagetian Developmental Theory

•Articulates

- Structure (or form) of thought
- Content of thought
- Developmental progression in thinking
- Details of stage transition
- Central conceptual structures = the “big ideas” or conceptual centres of domains

•Does so in a domain-specific way

- Parallel form and progression across domains but different semantic content

•The "mind's staircase"



Dialectical Cycles in Development

•Analogous to “successive and continued expansion of action repertoires” (Ziegler, 2005, p. 417) that describe the attainment of excellence –

Creativity, innovation, and genuine discovery as markers of excellence

“Normal creativity” or “constructivity” as distinct from genuine discovery (Case, 1988)



Innovative Potential (for genuine discovery)

- Occurs at the end of the 4th dialectical cycle (~ 18 or 19 years of age)
 - On the way -
- The end of a stage – at approximately 4, 10, and 18 or 19 years of age – is when children's capacity to synthesize thought is most evident.
 - May be critical assessment points for domains in which children already demonstrate talent and commitment (Case, 1988)
 - Motivation, extensive practice, and time also important



Dialectical Cycle of Drawing Development in Early and Middle Childhood

Age 4: Following earlier stages of scribbling and emergent representational ability, children can draw human figures and inanimate objects like houses and trees with spatial relations represented appropriately (e.g., head and trunk with arms and legs in appropriate locations).

Age 6: Two or more objects are drawn on a baseline so that a two-dimensional scene emerges.

Age 8: Objects are arranged in foreground and background scenes.

Age 10: Foreground and background scenes are coordinated through a middle ground, resulting in a coherent three-dimensional scene.

Ages are approximate, representing prototypical performance. Individual differences in age of acquisition are acknowledged in Case's theory.



Cross-Cultural Findings (Okamoto, Case, Bleiker, & Henderson, 1996)

**Canada (Toronto) (N=116) and China (Nanjing) (N=94);
children aged 4, 6, 8, and 10**

- **Spatial representations/overall composition (*central spatial structure*): Strong age effect but no effect for country**
- **Figural complexity: Strong age effect and strong effect for country favouring the Chinese children**
 - Figures more complete, more likely to be wearing clothes, drawn with better line control
 - Older children showed more movement and better form



Development and Artistic Giftedness

- **Unique pattern of development**
 - Central spatial structure advanced by ~ 2 years
 - Drawing/artistic skills considerably more advanced
- **Results in complex thinking and a rich journey on pathways to excellence (Porath, 2006a, 2006b)**



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Wang Yani

<http://www.youtube.com/watch?v=bVxk7b9HigM>



I've Found Two Pumpkins 1981

At age 6, Yani demonstrated complex use of occlusion, an ability typically seen at age 8 but not in such a complex, sophisticated form.

Goepper (1987) noted the “ease with which she employs traditional techniques and, on the other hand, the degree to which she has retained the spontaneity of a child” (p. 11) and that “her works are immediately recognized as typically Chinese, inconceivable without a basis in traditional Chinese modes of expression” (p. 12).

Images in this slide and those following can be found in *Wang Yani: Pictures by a Young Chinese Girl* (1987, Prestal-Verlag, Munich).



So Many Fish! 1981

Age 6 Another example of complex use of occlusion.

There are indications of foreground/middle ground/background typical of 10-year-olds but in a much more integrated form than is typical.



What a long River! 1983

Age 8 Yani's use of foreground/middle ground/background using 4 layers of depth is a highly sophisticated rendering of perspective.

The style of this painting foreshadows her later abstract works.

"Landscape ranks as the highest, most demanding subject in mature Chinese painting, and Yani's pictures constantly show the compositional and formal devices which Chinese artists have used for centuries in the depiction of landscape" (Goepper, 1987, p. 13).

– narrow vertical format



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I Want the Most Beautiful Flower 1985

Age 10 Complex, multilayered (taking the notions of foreground, middle ground, and background and working with them in ways rarely seen in other children)

Clearly this transitional point is characterized by complex synthesis of form and technique.



Let's Play Together! 1985

Age 10. This painting shows even more complex synthesis of foreground, middle ground, and background, stacked in the traditional vertical format in a dynamic way. Goepper (1987) commented on the creativity of this painting, “Yani’s painting ceases to be a purely Chinese phenomenon and points beyond the artistic culture of her native country” (p. 13).

A child on the pathway to excellence, such as Yani, likely reaches the stage where innovative potential is possible at a much earlier age than that predicted by Case’s developmental theory.



Beautiful Red Roofs 1985 Impressions of Germany

Again, phenomenal complexity. Multilayered – “playing” with form, angles. Distinct style.

The painting “almost brings to mind Paul Klee, with its ‘abstract’ surface rhythm consisting of Western houses and ... church tower. The manner of drawing, however, and the fluidity of the wash are unmistakably Chinese” (p. 13).



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How Beautiful Mother Chyrsanthemum Is! 1986

Age 11 In this painting, Yani demonstrated an even more abstract style, clearly foreshadowing the work she went on to do as an adult.

<http://www.galerie-jaspers.de/Yani.html>



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Questions

Is a Western view of perspective useful in the analysis of Chinese painting?

Should the "structural" content be redefined?



Why Does Development Matter?

Respect for developmental stages

Gifted children's pathways through developmental stages are elaborate and relatively advanced but they are also influenced by maturation.

Dynamic interplay between conceptual and domain-specific abilities (e.g., artistic technique, colour use, representation of expression and movement)

General conceptual structures strongly influence specific learning and specific learning makes a strong contribution to conceptual development (Case, 1996).



Educational Implications

A design for development

Conceptual understandings are necessary starting points in instructional planning – build conceptual bridges

Both conceptual understanding and discipline-specific skills are important in helping gifted children to consolidate and refine their expertise

Need opportunities to integrate, consolidate, and appreciate underlying conceptual meaning

Exclusive focus on skills can lead to cumulative deficits in achievement



The AMG and Developmental Theory

- **Identification of a learning path to excellence is enriched by a detailed look at conceptual understanding**
 - Mentors need to understand how a discipline develops and how a child develops.
- **Design for development informed by detailed knowledge of "what develops" conceptually**
 - Important in the acquisition of complex knowledge networks
 - Part of the “smart context” (Barab & Plucker, 2002) that allows individuals to demonstrate potential for excellence



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