



# 行政院國家科學委員會專題研究計畫成果報告

計畫編號：NSC 88-2614-H-019-001<sup>134</sup>

執行期限：87年8月1日至88年7月31日

主持人：詹文娟(vhsueh@nhctc.edu.tw) 執行機構：國立新竹師範學院幼教系

## 一、中英文摘要

本研究屬描述性的質的研究。以半結構式的訪談，藉十個開放性的問題來瞭解四至六年級資優生對自己能力的信念、學習的原因及對挑戰的看法。大約有三分之二的資優兒覺得自己不算聰明；不論聰明是先天或後天造成，絕大多數的資優兒認為後天的努力遠比先天的天賦重要；覺得自己不算用功的兒童超過自認用功的兒童，並且會用功的科目及原因皆極為分歧；大部分兒童在校內校外皆有挑戰的經驗，且表達出許多負面的情緒，然而這些負面的情緒並未使這些兒童放棄挑戰，大多數兒童皆表示會繼續想辦法解決問題。

**關鍵詞：**學習動機，資優，國小資優生，低成就，能力信念，成就目標，挑戰，成就動機模式，質的研究，訪談

## Abstract

This study employed a semi-structured interview procedure using 10 open-ended questions to assess gifted children's beliefs of their ability, their reasons for working hard, and their challenge responses. About two-third of these gifted children did not consider themselves smart. Most of them also believed in the importance of effort whether their smartness was given or through effort. More children felt that they are not working very hard and their reasons for working hard on certain subjects were quite diverse. Most children had challenging experiences inside as well as outside of school and had expressed rather negative feelings when they encounter challenges. However, these negative feelings did not inhibit them from trying to solve these challenges.

**Keywords :** motivation, gifted, elementary, underachievement, beliefs of ability, achievement goals, challenges, achievement motivation model, qualitative research, interview.

## 二、緣由與目的

Past research suggested that children's implicit beliefs of their ability and goal orientations were influential to children's responses to challenges (e.g., Diener & Dweck, 1978, 1980; Dweck & Leggett, 1988) and school performances (e.g., Stipek & Gralinski, 1991, 1996). Dweck and Leggett (1988) proposed a research-based model to explain how children's implicit theory affect their goal orientation and achievement behavior pattern. That

is, children either believe that their intelligence is malleable (incremental) or fixed (entity). Incrementally oriented children tend to hold learning goals and welcome challenge as an opportunity to learn more. Entity oriented children tend to hold performance goals and view challenge as presenting danger for failure and disgrace. As a result, children with an incremental view of their intelligence will put in more effort when tasks become more difficult and children with an entity view of their ability will develop a 'helpless' behavior pattern with challenging tasks. However, Dweck and her colleagues (e.g., Dweck, 1997) also found that children with high self-confidence were not affected by their entity view and did not develop 'helpless' behavior pattern in challenging situations.

Research on gifted children often found that gifted children have higher self-confidence (e.g., Braggett, 1990; Colangelo, Kelly & Schrepter, 1987; Hay, 1993; Vallerand et al., 1994), are more learning goal oriented (e.g., Chan, 1996; Gottfried & Gottfried, 1996; Vallerand et al., 1994), and prefer challenging tasks than children not identified as gifted (e.g., Hay, 1993). However, underachievement of gifted children has also troubled educators for a long time (e.g., Passow, 1989; Rimm, 1991; Van Tassel-Baska, 1992). Dweck (1997) once suggested that gifted children, especially gifted females, were more vulnerable to the entity view because of the 'gifted' label. As a result, they tend to employ performance goals and avoid challenges to protect their 'gifted' title. From Terman's longitudinal study (e.g., Terman & Oden, 1959) to Csikszentmihalyi's (e.g., Csikszentmihalyi, Rathunde, & Whalen, 1993) observation in recent years all suggested that gifted children as a group are far from homogeneous. Gifted children's achievement does not necessarily coincide with their ability nor potential. More research is needed to further understand how motivational factors such as implicit beliefs and goal orientations affect gifted children's behavior patterns.

The purpose of this study has three folds: first, to obtain rich information in gifted children's implicit beliefs of their ability, goal orientations, and perceptions of challenge; second, to compare the information with existing research findings; and third, to understand possible causes of gifted children's maladaptive behavior pattern which leads to their underachievement.

### 三、結果與討論

*Perceptions of smartness.* When children were asked whether they consider themselves as a smart person, 22 children said "no" and 11 said "yes". Four children were not sure, four didn't answer the question directly, and 2 children said that they are smart only in certain ways but not in other ways. Nine out of 11 children who considered themselves as smart referred to their good grades or performances. Only one child said that he is smart because he is a quick thinker and one child said that he is like a "book worm" (reads a lot) but couldn't get good grades. Children who did not consider themselves as smart used both self-referenced ("still don't know a lot of things" or "not working hard") and other-referenced ("not as good as other children") systems. Three children said that one should never consider oneself smart because

"don't like to brag", "this means self-content and you will not improve yourself anymore", or "what if you met someone that's smarter than you, then you will contradict yourself". Gifted children also held different definitions to smartness. Personal characteristics such as hard working, fast learning speed, good memory, flexibility, good judgement, and perseverance appeared 18 times in the interview while external performances were mentioned 12 times to define smartness.

Implicit beliefs of ability. Fifteen children (out of 43) held a clear incremental view by stressing the importance of effort and continuous improvement of one's ability (smartness). Thirteen children believed that one could change how smart one was in some subject areas but not in other areas. Only 3 children said that one's smartness is given when one was born and one can only make small changes by effort (entity view). Twelve children either said "don't know" or didn't answer the question. Interestingly, several children also mentioned that people can get smarter by working hard and will get dumb if he/she doesn't work hard. Children also define smartness very differently and, as a result, their responses to the question "How can you get smarter?" varied greatly. Almost half of the interviewees (21 out of 43) mentioned reading as a way to "get smarter". Other answers include, asking people, think more, practice more, act on it, and so on.

Achievement goals. Children were asked to explain why they wanted to work hard on something. Reasons relating to self-improvement appeared 34 times and other-referenced reasons appeared 28 times. Fourteen children were more learning goal oriented and only talked about reasons related to themselves. Seven children only talked about external reasons such as parent demand or better grades. Eleven children mentioned both internal and external reasons. Other nine children did not respond to this question.

Challenge response. When the research asked these children whether they ever felt challenged in- and out-side of school, 95% (41 out of 43) said that they had one or more challenges in school and 66% (22 out of 43) had challenges outside of school. Among school subjects, math challenge appeared 31 times, and Chinese, English, and Science were mentioned twice each. Out of school challenges had more diversity that ranged from sports, computer games, arts, dancing, calligraphy, go, puzzle books, and piano. One child said "unlock the lock" and one mentioned "human relationships" as challenging. Five children talked about academic challenges from after school classes. Two children thought "folding clothes" and "making eggs" as challenging.

More than half of these children (24 out of 43) expressed negative feelings when they were challenged in school and only 2 children had positive feelings (happy and fun) toward challenging tasks. Nine children either felt that they want to solve the problem or seek explanations without involving emotions. Out of school challenges seemed to induce similar feelings for these children (22 out of 43 expressed negative feelings; two children expressed happy and fun; and, 11 children talked about "wanting to continue to work on it" or "I'll try it next time").

Regardless of their negative feelings toward challenges, gifted children in this research never said that they would give-up or stop trying. Most of the children said that they would try even harder; seek help from their parents, teachers, or classmates; or, try to figure out a way to solve the problem. Only 3 children said that they might "lose patience" or "forget it" for out of school challenges but not for school related challenges.

Discussion. Interview data from this research suggested that more gifted children in Taiwan tend to think themselves not as a smart person than smart. They had various definitions to what smartness is. These children also held strong incremental view to their ability believing that they can always change how smart they are.

According to Dweck's model, these children should hold strong learning goals and welcome challenges. Though children did hold stronger learning goals than performance goals, the differences were small. Many students still referred to external goals. Prior research (e.g., Dweck, 1997) suggested that performance goal orientations may lead to maladaptive behavior pattern which causes children to avoid challenge.

Challenging experiences both inside and outside of school were not uncommon to these children. Most children expressed rather negative feelings when they encounter challenges. However, they seldom gave up or stop trying. These children seemed to demonstrate the most adaptive behavior pattern regardless of their emotions.

Relations between children's implicit beliefs and behaviors seem to involve a more complex structure than previously suggested. This study provided some in-depth qualitative information on gifted children's perceptions of smartness, effort, and challenge responses in Taiwan. More research is needed to further understand why do these children persevere in the face of challenge and what motivational factors affect their pursuit to success.

#### 四、計畫成果自評

This research has provided qualitative information on gifted children's thoughts and behaviors. It has revealed the complexity of children's inner world. By further understanding how gifted children in Taiwan think and behave, we should be able to design challenging curriculum to enhance individual development for every gifted child in Taiwan.

The result of this research has been submitted to the 2000 Annual Conference of the American Educational Research Association (AERA).

Personally, this study has helped me become a better researcher in qualitative research. Every step in the process from transcribing interview data, making sure the data is error-free and complete, developing categories, establishing coding reliability, analyzing data, and writing up the results is time consuming and very demanding. I would like to express my gratitude to the NSC support to this study that made my life a little easier to manage.

## 五、參考文獻

- Braggett, E. (1990). *Gifted children*. In A. Ashman & J. Elkins (Eds.) *Educating children with special needs*. Sydney: Prentice Hall.
- Chan, L. K. S. (1996). Motivational orientations and metacognitive abilities of intellectually gifted students. *Gifted Child Quarterly*, 40, 184-193.
- Colangelo, N., Kelly, K. R. & Schrepter, R. M. (1987). A comparison of gifted, general, and special learning needs students on academic and social self-concept. *Journal of Counseling and Development*, 66, 73-77.
- Csikszentmihalyi, M. (1985). Emergent motivation and the evolution of the self. In D. Kleiber & M. H. Maehr (Eds.), *Motivation in adulthood* (pp. 93-119). Greenwich, CT: JAI Press.
- Csikszentmihalyi, M. (1988). Society, culture, and person: A systems view of creativity. In R. J. Sternberg (Ed.), *The nature of creativity: Contemporary psychological perspectives* (pp. 325-339). New York: Cambridge University Press.
- Csikszentmihalyi, M., Rathunde, K., & Whalen, S. (1993). *Talented teenagers: The roots of success and failure*. New York: Cambridge University Press.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.
- Diener, C., & Dweck, C. S. (1978). An analysis of learned helplessness: Continuous changes in performance, strategy, and achievement cognitions following failure. *Journal of Personality and Social Psychology*, 36, 451-461.
- Diener, C., & Dweck, C. S. (1980). An analysis of learned helplessness: II. The processing of success. *Journal of Personality and Social Psychology*, 39, 940-952.
- Dweck, C. S. (1997). Students' theories about their intelligence: Implications for talent and achievement. In R. Friedman (Ed.), *The psychological development of the gifted child: The emotional price of excellence*. Washington, D.C.: American Psychological Association.
- Dweck, C. S., & Leggett, E. (1988). A social-cognitive approach to motivation and personality. *Psychological Review*, 95, 256-273.
- Elliott, A. J. & Harackiewicz, J. M. (1994). Approach and avoidance achievement goals and intrinsic motivation: A mediational analysis. *Journal of Personality and Social Psychology*, 70, 461-475.
- Gallagher, J. J. (1975). *Teaching the gifted child*. Boston: Allyn & Bacon.
- Gottfried, A. E., & Gottfried, A. W. (1996). A longitudinal study of academic intrinsic motivation in intellectually gifted children: Childhood through early adolescence. *Gifted Child Quarterly*, 40, 179-183,
- Harter, S., & Connell, J. P. (1984). A model of children's achievement and related self-perceptions of competence, control, and motivational orientation. In J. Nicholls (Ed.), *Advances in motivation and achievement: Vol. 3. The development of achievement motivation* (pp. 219-250). Greenwich, CT: JAI Press.

- Hay, I. (1993). Motivation, self-perception and gifted students. *Gifted Education International*, 9,(1), 16-21.
- Hsueh, W. C. (1997). A cross-cultural comparison of gifted children's theories of intelligence, goal orientation, and responses to challenge. Unpublished manuscript. Purdue University.
- Lepper, M., & Hodell, M. (1989). Intrinsic motivation in the classroom. In C. Ames & R. Ames (Eds.), *Research on motivation in education: Vol. 3. Goals and cognitions* (pp. 73-105). San Diego: Academic Press.
- Passow, H. A. (1989). Needed research and development in educating high ability children: An editorial. *Roeper Review*, 11(4), 223-229.
- Rimm, S. (1991). Underachievement and superachievement: Flip sides of the same psychological coin. In N. Colangelo & G. A. Davis (Eds.), *Handbook of gifted education*. MA.: Allyn and Bacon.
- Stipek, D. (1993). *Motivation to learn: From theory to practice* (2nd ed.). Boston: Allyn and Bacon.
- Stipek, D. J., & Gralinski, J. H. (1991). Gender differences in children's achievement-related beliefs and emotional responses to success and failure in mathematics. *Journal of Educational Psychology*, 83, 361-371.
- Stipek, D. J., & Gralinski, J. H. (1996). Children's beliefs about intelligence and school performance. *Journal of Educational Psychology*, 88, 397-407.
- Vallerand, R. J., Gagne, F., Senecal, C. & Pelletier, L.G. (1994). A comparison of the school intrinsic motivation and perceived competence of gifted and regular students. *Gifted Child Quarterly*, 38(4), 172-175.
- VanTassel-Baska, J. (1991). Research on special populations of gifted learners. In M.C. Wang, M. C. Reynolds, and H. J. Walberg (Eds.), *Handbook of special education: Research and practice* (Vol. 4, pp. 77-101). Oxford: Pergamon Press.
- Wu, W. T. (1995). Talks in the 11<sup>th</sup> Conference of World Council of Gifted Children. *Gifted Child Quarterly*(in Chinese), 56, 34-37.
- 吳武典 (1995): 對第十一屆世界資優教育會議的講話。資優季刊, 56, 34-37、30。

## Appendix A

### 訪談程序表

我是詹文娟老師。這次訪談是希望了解資優兒童的一些想法，接下來我會問你幾個問題，然後讓你玩兩個益智遊戲，然後再問你幾個問題。我需要把這段訪談錄下來，因為有的時候我會來不及寫而漏掉一些重要的資訊，錄影帶可以幫我記住這些資料。除了我之外，別人不會看到你的錄影帶。假如你有任何問題可以隨時問我。

1. 你覺得你是一個聰明的人嗎?
2. 你覺得你的聰明是從那兒來的?
3. 你覺得你能改變你的聰明程度嗎?)
4. 什麼事情會讓你更聰明?
5. 你為什麼要用功?
6. 你在學校遇過具有挑戰性的事情嗎 你能舉例嗎?
7. 當你受到挑戰時, 你的感覺如何?
8. 你會如何反應 (如何做)?
9. 除學校外(日常生活中), 你遇過具有挑戰性的事情嗎? 你能舉例嗎?
10. 當你受到挑戰時, 你的感覺如何? 你會如何反應 (如何做)?