Gifted Primary Students' Knowledge of Self Directed Learning

Penny Van Deur
Flinders University *penny.vandeur@flinders.edu.au*

Gifted students are often described in the literature as being self-regulated, self-directed learners. Ten gifted primary students were interviewed in order to clarify the concept of self-directed learning in students of primary age. The students provided information on their knowledge of self-directed learning, explanations of the self-directed learning process, self-directed learning at school and out-of-school, learning preferences, and their attitudes to self-directed learning. Gifted students' views were compared with those of ten randomly selected students and four students identified as having learning difficulties in classroom work.

For gifted students, understandings of self-directed learning included internal influences such as initiative, effort, and persistence, and external influences included time management strategies, working with others, and using resources.

The paper introduces a model of self-directed learning in primary students. The model includes motivation, learning strategies and the nature of the school context.

Gifted primary students, self-directed learning, inquiry,
self-regulated learning, motivation, learning

INTRODUCTION

Recently there has been an emphasis in curriculum documents on self-directed learning for all students in South Australian primary schools (DETE, 2001). Gifted students who are regarded as efficient autonomous learners could provide a clearer understanding of the concept of self-directed learning in all students. This paper discusses the following questions.

1. What is self-directed learning in primary students?
2. What do gifted students know about self-directed learning?
3. In what ways can the information gained from interviewing gifted students contribute to the construction of a model of self-directed learning in primary students?

Gifted students have been referred to as independent workers who are self-motivated (DECS, 1996) and self-sufficient (Clark, 1992). In 1975, Treffinger described self-directed learning as an outcome to be strived for by the gifted. Self-directed learning for gifted students was described by Treffinger in terms of students managing instructional decisions and defining projects to accomplish self-initiated goals and objectives. Sternberg (1997) also emphasised self-management when he referred to gifted students as good mental self-managers because they are able to combine analytic, synthetic and practical giftedness. These descriptions suggest that there are internal and external influences on gifted students when they are learning in a self-directed way.

SELF-DIRECTED LEARNING AND GIFTED STUDENTS

There are few descriptions of self-directed learning in primary age children, though there have been discussions of the importance of self-directed learning for gifted students. In 1975 Donald Treffinger described self-directed learning and argued that a goal of gifted education should be self-directed learning because research suggested that gifted students are critical, independent in thought and judgment, as well as self-starting, and perseverant. Treffinger (Maker and Nielson,1995) emphasised the importance of creating an environment in which learners can manage and direct their efforts towards the attainment of specific goals.

Treffinger described self-directed learning in terms of the process of moving from teacher prescribed class activities, to providing choices and options to students, and then to the learner controlling the choices while the teacher provides the resources and materials. Treffinger emphasised that both cognitive and affective processes are involved, and that the skills of self-directed learning are acquired through planned instructional experiences. Maker and Nielson (1995) argued that the skills of self-management and self-direction will enable gifted students to do in-depth investigations of real problems.

Internal influences on self-directed learning

In the psychological literature there are discussions of internal influences on learning. Dispositional beliefs effect the way students approach learning and the strategic orientations that are employed as they learn. They create an internal context and influence the self-management strategies students choose when learning (Schoenfeld, 1985). Self-regulation has been described as a reflection of the student's knowledge of their own learner characteristics and the task demands (Palinscar and Brown, 1989).

Self-regulation (metacognition)

Metacognition involves the knowledge and regulation or control of cognitive processes (Schoenfeld, 1985) and influences the strategies students use in their learning. Gifted students have been described as possessing greater metacognitive knowledge indicating that they know more about their own mental activities than other children (Schwanenflugel, Stevens and Carr, 1997). Self-regulation is part of metacognitive knowledge and is important in working on learning tasks, as students need to make a variety of decisions in order to understand the task, plan a course of action, select strategies to carry out the plans, monitor the execution of activities while the strategies are being implemented, evaluate the outcome of plans and strategies and revise or abandon non-productive strategies and plans (Garafalo and Lester, 1985). A positive motivation for learning is also needed to make the effort to carry out the self-regulatory actions to manage these processes.

Motivation

Treffinger's description of self-directed learning assumed that children will learn better if they are involved in their learning and that they will be more motivated to learn. Motivation is a key element in goal-directed behaviour such as learning and depends in part on students believing that they are competent to learn. Motivational knowledge possessed by students influences their learning by determining the tasks they select to do, their temperament while working on tasks and their persistence when striking difficulty (Winne, 1991). Gifted students can achieve high levels of learning competence because of their high motivation, persistence, commitment and wanting to do well (Braggett, 1997). Motivation can exert an influence on the attributions made by students for success or failure in learning and on their feelings of self-efficacy for learning.

Self-efficacy

As students monitor their engagement with tasks internal feedback occurs (Butler and Winne, 1995) which is interpreted with reference to their beliefs about their learning. Causal attributions and self-efficacy beliefs may be seen as components of internal feedback from learning. Winne (1991) defined self-efficacy as a person's belief about his or her own competence, ability and power to achieve specific goals. Self-efficacy explains how judgements people make about their capabilities can lead to success or failure and can affect the amount of effort they are prepared to invest in order to succeed (Bandura, 1992). Self-efficacy beliefs exert an influence on dispositional beliefs, which influence student motivation for learning. Schunk (1998) described self-efficacy as influencing choice of activities, effort expenditure, persistence and achievement.

Causal attributions

Causal attributions are explanations of outcomes and are commonly concerned with the role of ability and effort in learning (Ames and Ames, 1984). Attributional processes explain who or what was responsible for success or failure on a task. Students who make attributions about success to internal factors such as ability or effort believe they can control their learning and be successful (Berliner and Gage, 1988). This leads to a positive self-concept in relation to achievement. Students who expend a considerable amount of effort and attribute their successful performance on a task to the strategies selected and their effort on the task will have high motivation for learning as effort attributions encourage students to persist on future tasks (Ames and Ames, 1984).

The motivational state of students influences the strategic orientations which are employed as they select strategies for learning. Students need to be motivated to choose a mastery orientation toward learning which influences them to manage their learning in certain ways (Prawat, 1989). A mastery orientation favours complex learning strategies such as planning, monitoring, checking, and evaluating, and can empower students to respond pro-actively as opposed re-actively in various in-school and out-of-school contexts (Prawat, 1989). In order to develop a mastery orientation students need to be equipped with the strategies for learning on their own, to be self-regulating and to be motivated to use the strategies for learning. These considerations are particularly important when students are learning in a self-directed way.

THE INTERVIEW STUDY

The aim of the interview study was to seek the views of self-directed learning of gifted primary school students and to use these views to contribute to the construction of a model of self-directed learning in primary students.

Interviews with 24 primary school students were carried out as part of a larger study to clarify the concept of self-directed learning in primary school students. In the larger study questionnaires about self-directed learning were completed by 12 school staff, 22 parents and 80 students in one primary school.

The following research questions were designed to achieve the aims of the interview study.

1. 1.What are the views about self-directed learning of gifted students that can be used to clarify the concept of self-directed learning in primary children?
2. How do the views of self-directed learning given by gifted students compare with those of randomly selected students, and students with learning difficulties?

3. In what ways can the information gained from interviewing gifted students contribute to the construction of a model of self-directed learning in primary students?

Method

The interview responses of ten gifted students are discussed in detail in this paper. The students had been identified as gifted (125+IQ) using the Slosson's Intelligence Test. Six boys and four girls were interviewed. Six of the students were in Year 5, two students were in Year 4, and two students were in Year 6.

The interview was developed in order to gather information from the students about their knowledge of self-directed learning.

The researcher interviewed each student in a quiet room at the school site. The interviews were tape-recorded. Prompts were available for most of the interview questions. Few of the gifted students required the prompts to assist them to answer the questions. The responses to each interview question were transcribed and categorised. They are discussed below.

Knowledge of self-directed learning

Q1 What do you think self-directed learning is all about?

Self-directed learning was described as a solitary activity by most of the gifted students. The gifted students described self-directed learning in terms of teaching yourself, learning by yourself, and wanting to learn as well as being about not getting help.

> G5. *I think it's about where somebody if they want to learn something they will go on their own path and do it instead of getting help or something.*

Q17. Are you good at being self-directed as you work on some activities, and why?

All of the gifted students agreed that they were self-directed on some activities especially school projects. School related activities like language, spelling, and mathematics were cited. Two of the gifted students referred to effort and wanting to learn as the reason why they were self-directed on some activities.

> G4. *Um yeah. Projects. I'm better on other things. Probably because its much more free-er because say are working on the topic and you use the internet or look in the book. You've got more choice.*

Q21. Do you know anyone who is really good at self-directed learning? Can you say what the person does?

Most of the gifted students answered this question by saying that they did not know anyone who is really good at self-directed learning though most were able to describe the actions of a person they believed was self-directed.

> G2. *My friend is pretty good at self-directed learning. He's independent, very independent, he likes to find out stuff on his own, looking at his own reference books before going into the asking someone else.*

Self-directed learning at school

Q2. How do you get to be a self-directed learner?

The gifted students were able to describe how a person becomes a self-directed learner in terms of taking initiative, doing things alone, teaching themselves and finding their own way. Two students made motivational comments in their descriptions of wanting and trying to learn.

G3. *Um you start to kind of teach yourself and just keep going.*

Q3. When you are at school and you want to work out how to do something what do you do?

The answers to the question about finding out about things at school indicated that most gifted students believed that they would initially try to work out a problem alone, though they mentioned asking the teacher for help or asking another person for help. Four students answered that they would work out how to do something at school by looking it up in a book.

G7. *I'd read about things that I want to know about.*

Q7. What about when you make a mistake at school, what do you do about it?

The gifted students indicated that they would handle mistakes at school by asking the teacher or someone else or by coping with it alone.

G8. *I sort of think about what I've done wrong and then I try to fix it.*

Self-directed learning out-of-school

Q4. When you are not at school and you want to work out how to do something what do you do?

In the answers to the question the gifted students placed a strong emphasis on asking their parents or other people to help work out what to do as well as using resources such as the library, the internet and reading books. Two of the students made motivational statements when they mentioned effort attributions in comments about trying to work out how to do something.

G6. *I first try myself and then if I can't get it I just ask my mother.*

Q5. What do you think makes someone good at working out how to learn about things at home?

The answers to the question about what makes a person good at working out how to learn about things at home indicated the view that motivation and resources are important. The strategy of asking people was mentioned, as was the strategy of not asking other people.

G4. *Um sort of wanting to do it and using as many resources as possible.*

Q6. If you are working on something at home and you make a mistake, what do you do about it?

The majority of answers given suggest an independent view of handling mistakes. The students indicated that at home they would respond to mistakes by fixing or correcting them or trying again. Four students mentioned the strategy of telling or asking someone as a way of handling a mistake at home.

G2. *Um probably you try and correct it you know, don't cry over spilt milk but you just work out what the mistake was and fix it.*

Comparison of self-directed learning at school and out-of- school

Q8. Are there differences in the way you learn about things at school and the way you learn about things at home?

All but one of the gifted students answered that there are differences in the way they learn about things at school and the way they learn about things at home. At school students described

learning as involving working alone as well as depending on other people, being directed by the teacher, having more resources, and being focused on learning at school.

The characteristics of learning about things at home were described as doing activities alone, thinking for yourself and using your own brain and resources, not having computers or the internet to use as well as not having a big library, and having more time to do things.

> G2. *Yes because normally at school you're directed by your teacher to what you are actually learning but at home you um think for yourself on a project it's partly directed by your teacher say in homework but you use your own brain to find it out like your own resources.*

Q16. Are you usually more of a self-directed learner at home or at school, and why?

The majority of the gifted students answered that they were usually more self-directed at home. The reasons given for this were that the students liked working by themselves and using their own resources, that it was easier to learn at home because there were fewer people to be distracted by, they were not rushed, and that there were more books and the internet to use at home.

> G4. *At home mainly. Probably because I like to learn about that stuff. I just normally just get taught at school and I normally just learn that stuff at home.*

Q19. Is self-directed learning important for learning at home or at school?

All of the students answered that self-directed learning is important both at home and at school. Half of the students mentioned that self-directed learning is important because they wanted to be able to learn, while three students explained that self-directed learning would be important for them in the future.

> G4. *Both. It just makes you better educated so when you're an adult you can learn. You can be self-directed when you're young and when you're an adult when you want to find out about things you can do that. When you're an adult you know the skill.*

Preferred way of learning

Q9. When you need to find out about something, what works best for you, to do it on your own or with friends and why?

Most of the gifted students answered that they would prefer to find out about something by asking friends. They explained that friends have more knowledge and ideas and can give advice. Two students answered that they would prefer to find out about things on their own because they could get more ideas alone, and they could use their own ideas.

> G3. *Well I usually work stuff out for myself at home and friends help me.*

Q10. Do you have a favorite way to learn about things?

All but one of the students expressed positive views about their attitude to learning. The students gave a variety of explanations of their favorite way of learning about things, with half of the students included reading in their explanation.

> G5. *I actually like to read books and learn stuff.*

Explanations given by the gifted students of the self-directed learning process

Q11. If you were being self-directed in learning about something, what sorts of things would you do?

Most of students mentioned self-directed learning actions involving inquiry. They described thinking and asking questions as well as using resources such as the computer, encyclopedia, reading books, and looking for information on the Internet. Three students described the process in terms of teaching themselves a strategy, trying to figure out an answer, and setting goals. The answers implied an effort orientation to self-directed learning.

> G1. *You'd be talking about it, you'd be thinking it through probably writing it down and once you'd finished thinking about it you put all your ideas together and create what really is what you were learning.*

Q12. Do you think a self-directed learner would check what they are doing?

The majority of the students recognised that self-directed learners would check what they are doing with the most frequent explanation being that they would proof read the work or ask another person to proof read it. Three students mentioned self-directed learners using books to check their work.

> G2. *Maybe get a parent to proof read what they are doing or spell check if you're doing it on the computer and they do it themselves if they have a good sense of what they are doing and how to correct it.*

Q13.Do you think a self-directed learner would plan how they will use the time they have to find out about a topic?

Nine of students agreed that self-directed learners would plan how they will use the time they have to find out about a topic. One student answered no and explained that a self-directed learner might not plan but use their time carefully. One student answered that a self-directed learner would plan the use of time at school but not at home. Another student indicated a motivational orientation in the answer to the question, by saying that if a person is motivated to be a self-directed learner he/she would want to plan in order to find out about other topics.

> G9. *I reckon you could, like you have to want to be a self-directed learner and you have to want to find out about other things.*

Q15. What could help you get better at being self-directed?

All of the gifted students were able to suggest ways they could get better at self-directed learning. Most suggested a motivational orientation in their answers, which described getting better in terms of wanting to learn and encouraging themselves.

> G6. *Encouraging yourself and saying to your mum if I ask you this just don't tell me what it is cos I want to be self-directed and things like that.*

Q20. When you have finished learning about something, do you usually think about what you did and what worked well as you were learning?

Eight of the ten students answered that they would reflect on what they did in learning about a topic and the process of learning about it. Explanations described thinking about mistakes and thinking about what was done and how that could be used on subsequent learning.

> G6. *Yeah and then you can use that sequence that you worked well in to do something else properly.*

Attitude to self-directed learning

Q14. Do you think you can get better at being self-directed?

All of the students answered that they believed that they could get better at being self-directed.. Experience in being self-directed was mentioned as a way of improving as well as trying, taking initiative and encouraging oneself.

> G1.*You can get better by starting to do things by yourself and once you've done one thing try another one and then a few more and then after that you definitely become a self-director. I'm much better than at the beginning of the year.*

Q18. Do you think self-directed learning is important?

The majority of the students said that they believed that self-directed learning is important. The students described it as important in being independent and mentioned a future orientation in their answers by saying that self-directed learning would be important when they were older. Three students mentioned wanting or needing to be self-directed.

> G7. *Yes because you need to be able to do it later.*

Q22. Is there anything else that you would like to say about self-directed learning?

Five students made further comments about self-directed learning. Most of the comments were about the importance of self-directed learning for life in the future:

> G9. *I think it's a good idea because once you leave school you're independent and you need to know what to do.*

DISCUSSION

All of the gifted students were able to provide a description of self-directed learning. They described self-directed learning in terms of teaching oneself, learning alone and seeking help from others. Most of the students described being self-directed as related to working on projects. The gifted students described self-directed learning at school in terms of taking initiative. They said that at school they would try to work out something by trying to do it alone and then asking someone for help. If they made a mistake at school the gifted students indicated that they would ask the teacher or someone else for help. Motivation was mentioned in terms of trying to learn.

The gifted students gave a view of self-directed learning out-of-school as an independent process though they emphasised asking other people for help and using resources. They had an independent view of coping with mistakes out-of-school. This was shown in comments about handling mistakes by making an effort and persisting as well as fixing or correcting them alone. Motivation was mentioned in answers about wanting or trying to learn. The gifted students agreed that there were differences in the way they learnt about things at home and at school. They described learning at school where they were required to do things and there were resources for learning. They described learning at home where they chose their own activities, made an effort, persisted and used their own resources. They believed that they were more self-directed at home because they had more control over the situation. All of the gifted students agreed that self-directed learning was important at both school and home and emphasised its benefit for the future.

The gifted students expressed positive attitudes to self-directed learning and agreed that they would prefer to find out about things with friends. Motivation was mentioned in comments about trying to do activities alone. They described the self-directed learning process in terms of inquiry. The said that they would check what they were doing by proof-reading, they would plan the way they would use time when working on a topic, and that they would reflect on their learning. They described self-directed learning as finding out about things, asking questions, checking their own work, planning the way time was used, and reflecting on finished activities. They also described reflecting on their learning and thinking about what they did and how they might use that learning

to help them learn other things. Motivation was mentioned in comments about wanting and trying to learn.

The gifted students expressed positive attitudes to self-directed learning and its importance for their future. They all said that they believed they could improve in being self-directed, and many students mentioned having experience as the way to improve. Motivation was mentioned in comments about getting better at self-directed learning by trying or encouraging themselves to learn.

The answers of the gifted students showed that they knew about self-directed learning. Motivation was mentioned in the responses to most of the questions. They described differences in self-directed learning at school and out-of-school. The answers given implied that most of the gifted students had little choice in the activities they did at school, while at home they could try more things, take their time, do activities by themselves and think for themselves. The students emphasised the social dimension of learning in working with friends, and asking others for help both at school and out-of-school as well as using resources such as the library, the internet and reading books.

Comparing the views of self-directed learning given by gifted students with those of randomly selected students and students with learning difficulties

As well as the interviews carried out with ten gifted primary school students, interviews were carried out with ten randomly selected students and four students identified as having learning difficulties in classroom work. The responses given by each group showed that all students knew about self-directed learning, though there were some differences in the responses given by the students in each group.

The answers given by the randomly selected students showed that their views of self-directed learning were mainly school oriented. They mentioned motivation especially in relation to learning at school. The small group of students identified as having learning difficulties in the classroom indicated that they viewed self-directed learning as mainly related to learning at school and being directed by the teacher. They mentioned motivation in relation to self-directed learning at school and in comments about fixing up mistakes. Though they expressed the view that they liked to work with friends, the students with learning difficulties indicated that they would handle mistakes alone at school.

Students in the three groups described self-directed learning as learning alone while agreeing that they prefer to work with friends and that they would seek help from others at home. Students in the three groups showed positive attitudes to self-directed learning and the possibility of improving self-directed learning. The gifted group gave greater emphasis to the importance of motivation in self-directed learning. They referred to internal or self-regulated learning strategies as well as motivational concerns and external or self-directed strategies where resources are sought in the environment.

A model of self-directed learning in primary students

The interview responses were interpreted in relation to the views given in questionnaires by 80 primary school students, 12 school staff and 22 parents. The model of self-directed learning in primary school students summarises these views and is shown in Figure 1.

The model of self-directed learning in primary students proposes that self-directed learning includes internal influences such as dispositions which influence the way students approach tasks, as well as initiative, effort, and persistence. Self-regulatory strategies of planning, checking and

reflecting are also internal influences. Motivation is recognised as important through the processes of self-efficacy which is the judgement made about one's capabilities to work on a task, and causal attributions which explain who or what was responsible for success. A positive motivation for self-directed learning would enable a student to make an effort to carry out self-directed learning strategies to find resources and to persist when running into difficulties. The external influences include strategies used to direct and impose a structure on an overall learning activity in order to reach goals. These strategies include finding resources in the environment such as books, electronic sources, and other people, as well as time management, and being able to work with others.

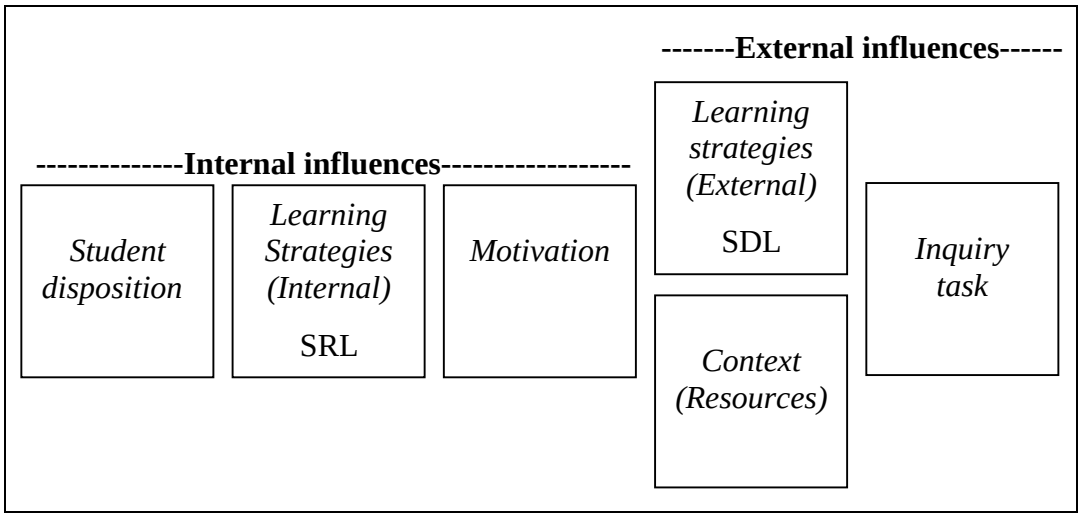

Figure 1. Self-directed learning in primary students

The model of self-directed learning in primary students includes motivation, self-regulated and self-directed learning strategies and the nature of the school context in terms of the resources that can be accessed to carry out an inquiry.

CONCLUSION

This paper discussed questions related to clarifying the concept of self-directed learning in primary school students by asking gifted students what they know about self-directed learning. The views of these students and others as well as those of school staff and parents contributed to the construction of a model of self-directed learning in primary school students. The model describes internal and external influences on self-directed learning. Self regulation is described in terms of regulating oneself, while self-directed learning is based on self-regulation and is described in terms of directing oneself to learn or reach goals using resources in the environment. The gifted students emphasised motivation in their interview responses. According to this model a student could be self-regulating but not motivated to be self-directing. The model of self-directed learning is based on student dispositions, self-regulation and motivation. These influences operate in classrooms where students are able to be self-directed as they engage in inquiry-based learning.

REFERENCES

Ames, R. and Ames, C. (1984) *Student Motivation*. New York: Academic Press.

Bandura, A. (1992) Exercise of personal agency through the self-efficacy mechanism. In R, Schwarzer, (Ed.) *Self-Efficacy: Thought control of action* (pp.3-38). Washington, D.C.: Hemisphere.

Berliner, D. and Gage, N. (1988) *Educational Psychology* (4th Edn.) Dallas: Houghton Mifflin.

Butler, D. and Winne, P. (1995) Feedback and self-regulated learning: A theoretical synthesis. *Review of Educational Research*, 65 (3), 245-281.

Braggett, E. (1997) *Differentiated programs for primary schools*. Cheltenham: Hawker Brownlow Education.

Chan, L. (1996) Motivational orientations and metacognitive abilities of intellectually gifted students. *Gifted Child Quarterly*. 40 (4), 84-193.

Clark, B. (1992) *Growing up Gifted: Developing the potential of children at home and at school.* (4th Edn.), New York: Merrill.

Department of Education and Children's Services. (DECS). (1996) *Understanding Giftedness: A guide to policy implementation.* South Australia: Graphic Print Group.

Department of Education Training and Employment (DETE) (2001) *SACSA framework*. South Australia: DETE publications.

Garafalo, J. and Lester, F. (1985) Metacognition, Cognitive Monitoring and Mathematical Performance. *Journal for Research on Mathematics Education*, 16 (3), 163-176.

Hannah, C. and Shore, B. (1995) Metacognition and High Intellectual Ability: Insights from the study of Learning Disabled Gifted Students. *Gifted Child Quarterly*, 39 (2), 95-109.

Maker, C.J. and Nielson, A.B. (1995) *Teaching Models in Education of the Gifted* (2nd Edn.). Texas: Pro-Ed.

Palinscar, A. and Brown, A. (1989) Instruction for Self-regulated reading. In L. Resnick and L. Klopfer, (Eds.) *Toward the Thinking Curriculum: Current cognitive research*. Alexander, Virginia: Association for Supervision and Curriculum Development.

Prawat, R. (1989) Promoting access to knowledge, strategy and disposition in students: A research synthesis. *Review of educational Research*, 59 (1), 1-41.

Schoenfeld, A. (1985) *Mathematical Problem Solving*. New York: Academic Press.

Schunk, D.H. (1998) Teaching Elementary Students to Self-Regulate Practice of mathematical Skills with Modelling. In D.H. Schunk, and B.J. Zimmerman, *Self-Regulated Learning: From teaching to Self-Reflective Practice*. New York: The Guilford Press.

Schunk, D.H. and Zimmerman, B.J. (1998) *Self-Regulated Learning: From teaching to Self-Reflective Practice*. New York: The Guilford Press.

Schwanenflugel, P., Stevens, T. and Carr, M. (1997) Metacognitive knowledge of Gifted children and Non-identified children in Early Elementary School. *Gifted Child Quarterly*, 41 (2), 25-35.

Sternberg, R.J. (1988) *The triarchic mind.* New York: Viking Penguin.

Sternberg, R.J. (1997) A triarchic view of giftedness: Theory and practice. In N. Colangelo, and G. Davis. *Handbook of Gifted Education* (2nd Edn.). Needham Heights, MA: Allyn and Bacon.

Tittle, C. (1994) Toward an Educational psychology of assessment for teaching and learning theories, contexts and validation arguments. *Educational Psychologist*, 29 (3), 149-162.

Treffinger, D.J. (1975) Teaching for self-directed learning: A priority for the gifted and talented. *Gifted Child Quarterly*, 19 (1), 46-59.

Winne, P. (1991) Motivation and teaching. In H. Waxman, and H. Walberg, (Eds.) *Effective teaching: Current research*. New York: McCutchan.