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Research Paper

Enhancing Self-Regulated Learning Among Adolescents

PSYCHOLOGY

KEYWORDS : Self-regulated learning, Adolescents, Activity based training module

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ABSTRACT

In this current information age, the explosion of knowledge and the need for technical skills have posed a tremendous burden on our students, schools and families. Traditional view of learning as "an activity" will not solve the demands of this competitive world. Students are in a pressing need to master the skill of learning and regulating themselves to become lifelong learners. Self regulation is an ability to behave according to one's own intentions in a flexible way. Self regulated learners take responsibility of their learning and they actively participate in the learning process. Enhancing self-regulated learning skills will improve students' self-regulation of personal & behavioural functioning as well as academic performance. An activity based training module has been developed in order to enhance self-regulated learning skills. Forty ninth standard matriculation school students were randomly assigned as control group and forty seven students as experimental group. Quasi experimental pre-test and post-test design was adapted to find the effectiveness of the training module and significant findings were presented in this article.

Education is an important process for the growth and development of an individual as well as the society. Properly planned educational input can contribute to increase the national gross products and cultural richness, can build positive attitude towards technology and can increase efficiency and effectiveness of governance. Knowledge explosion of this information age have posed a tremendous burden on our students, schools, and families. Today, as never before, schools must empower students to enhance their academic achievement and become motivated, life long learner.

Self-Regulated Learning

Self-regulation is an ability to behave according to one's own intentions in a flexible way. Self-regulation in learning or Self-regulated learning (SRL) is a self directed process in which self generated thoughts, feelings, actions are systematically oriented towards the attainment of one's own goals. Zimmerman (1986) defined self-regulated learners as those who are metacognitively motivationally and behaviourally active participants in their own learning process. SRL provide students an important shift from learning controlled by others to responsibility for one's own learning (Spiegler & Guevremont, 2010). In terms of metacognitive process, self-regulated learners plan, organize, self-instruct and self-evaluate at various stages during the acquisition processes. From the motivational view, self-regulated learners perceive themselves as self-efficacious, autonomous and intrinsically motivated. In terms of behaviour, self-regulated learners select structure and even create social and physical environments that optimise the acquisition process. Hence, effective learners become aware of functional relations between their patterns of thought and action and social and environmental outcomes.

Self-Regulated Learning Strategies

Learning strategies and skills include thoughts, emotions, and behaviour that facilitate studying, understanding, knowledge or skill acquisition or the reorganization of one's knowledge base. This is very important for any student. Developing these strategies and skills in students will be helpful for them to become more strategic learners and take significant responsibility for their own learning. Zimmerman and Martinez-Pons (1986) defined SRL strategy as those actions directed at acquiring information or skills that involve agency, purpose (goals) and instrumentality self-perceptions by a learner. They are:

Self-evaluation: Setting standards and using them for self judgement.

Organizing & transforming: students initiated overt or covert rearrangement of instructional materials to improve learning.

Goal setting & planning: Setting of educational goals or subgoals by the students and students' planning for sequencing, timing, and completing activities related to those goals.

Seeking information: students initiated effort to secure further task information from non-social sources when undertaking an assignment.

Keeping records & Monitoring: Observing and tracking one's own performance outcome, often recording them.

Environmental structuring: Setting or creating effective settings for learning.

Self-consequences: Making personal rewards or punishment contingent on accomplishment.

Rehearsing & memorizing: Students initiated effort to memorize material by overt or covert practice.

Seeking social assistance: Students initiated effort to solicit help from peers, teachers and adults.

Reviewing records: Students initiated effort to reread tests, notes or textbooks to prepare for classes or further testing.

The purpose of self-regulatory strategy is to improve students' self-regulation of their personal functioning, academic behavioural performance and learning environment. Hence, by assisting students to learn to use various strategies for optimising self-processes and control their social/physical environment and behaviour, educators can help them to improve their degree of self-regulation. The researcher developed a training module for ninth standard matriculation school students, to promote five self-regulated learning strategies viz. self-evaluation, goal-setting & planning, rehearsing & memorizing, environmental structuring, and seeking social assistance.

Review of Literature

Self-regulated learning is viewed as the key to successful learning in school and beyond (Boekaerts, 1999). Many researchers stressed the importance of SRL to foster student's deep and meaningful learning, resulting in significant gains in students' achievement (Simons, Van der Linder & Duffy, 2000; & Zimmerman, 2002). Researches also show that students who are more cognizant of themselves as learners and who can better regulate their own intellectual activity are more successful in learning, problem solving, and transfer and function better in an overall academic capacity (Nota, Soresi & Zimmerman, 2004: Sundre & Kitsantas, 2004; & Valle e al., 2003). Eshel & Kohavi (2003) have

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stated that proper organization of the class is necessary to establish a situation where SRL opportunities might lead to good academic performance. Further, a lack of meta-cognitive skills or knowledge might threaten the exploration of new insights during learning (Stijnen, 2003). Hofer & Shirley have revealed the impact of a learning to learn course, which increased their valuing of the course and declined their test anxiety. Moon-Heum Cho's (2004) investigation to explore the effects of design strategies for promoting students' SRL skills & achievement have concluded that students need continuous interactions with peer and with instructors about SRL skills. They also need autonomy & responsibility to self-regulate their learning while they practise designed practices. Perry et al., (2006) have indicated the importance of instructional sophistication and student's awareness in fostering SRL. Perels, Gurtler & Schmitz (2007) have developed an intervention to enhance eighth grade students' self-regulation, and concluded that students received combined training (Instruction & Problem solving) conditions had an increase in self-regulatory competencies. The effect of SRL course on the academic performance and graduation rate of college students in an academic support program was investigated by Bail et al. (2008) and indicated that a single SRL course can have a significant impact on long term academic performance of college students. Educational reforms have suggested that the ability to self-regulated learning is essential for teachers' professional growth during their entire career as well as for their ability to promote SRL among students (Kramarski & Michalsky, 2009).

Rational for the Study

Many researchers have studied the influence of motivation and parental support on SRL (Sierens et al., 2009; Bell et al., 2002; Deborah et al. 2003; Pajares & Cheong 2003; Jeyavel & Kadhiravan, 2010). Jeyavel & Kadhiravan (2010) have revealed the impact of goal orientation and family environment on adolescent's SRL & it is found that 19% of SRL is contributed by student's goal orientation and their family environment. Self-evaluation, goal setting &planning, environmental structuring, and seeking social assistance are the different SRL strategies found significantly influenced by learning orientation & family cohesion. It indicated the importance of designing interventions for promoting these strategies.

Strategic instruction is viewed as an effective means of promoting self-regulated learning and perceived efficacy. Use of learning strategies improves performance on the task at hand and can generalize beyond the learning context (Pintrich et al., 1986). Self-evaluation, goal setting & planning, environmental structuring, seeking social assistance and rehearsing & memorizing SRL strategies were given emphasis in present intervention program which included four activities for each SRL strategy. Every session included one activity and modelled demonstration of the particular strategy. With a brief introduction session, experimental group students were trained in the school premises on the first hour, an hour per day for a month.

Goal setting is an integral component of self-regulated learning. Setting goals is a generic strategy that can be applied in various domains. Effective goal setting requires that people set a long-term goal, break it into short-term, attainable sub-goals, monitor progress and assess capabilities, adjust the strategy and goal as needed, and set a new goal when the present one is attained. If students are provided knowledge about goal and information that it is attainable, their learning efficacy increases, which contributes to more productive performance and greater skill acquisition (Schunk, 1989). Students who learned goal setting strategy wrote long papers, with quality essays (Page-Voth & Graham, 1999). Goal setting strategy training was aimed to kindle students' awareness about formulating educational goal, realizing how goals direct their behaviour, how to split their goals into achievable parts, and how their proximal goals guide their daily activity. Students were encouraged to practice goal setting on their own by seeing the model. They were also made aware of task or mastery goals and performance goals.

Ormrod (2000) have demonstrated that learning is easier and retention is better when learners can relate new information to things they already know and learners frequently impose meaning spontaneously on new material to help themselves remember effectively. Rehearsing & memorizing strategy activities helped students to learn meaningfully, understanding the role of past experience in their learning, how observations aid memory and formation of imagery. Students were provided knowledge about their own memory and its unique characteristics. Role of rehearsing in memory was explored in the group. Modelling about meaningful memorization, elaboration, and organization of their learning material were also been presented.

Instruction in the use of good work habits has been shown to benefit students (Boekaerts & Corno, 2005). Environmental influence in students' learning process was introduced in environmental structuring strategy development. These activities were included to differentiate between hearing & listening, importance of focused attention, distracting environment in learning and students' skill in structuring conducive learning environments physically as well as psychologically.

Self-evaluation involves comparing feedback information from self-monitoring with a certain kind of standard or goal. Feedback is information with which a learner can confirm, add to, overwrite, tune, or restructure information in memory, whether that information is domain knowledge, metacognitive knowledge, beliefs about self and task, or cognitive strategies (Alexander et al., 1994). Research also confirmed that learners are more effective when they attend to externally provided feedback (Bangert-Drowns, Kulik, & Morgan, 1991). Feedback and its importance were emphasized to students through an activity consisting self-evaluation strategy. Other activities were aimed at answering how students self-evaluate their action plan and own interest in learning activities.

Zusho et al. (2007) have concluded that help seeking can be influenced by the instructor by establishing supportive and caring climate in the classroom which will have profound influence on students' learning. Slavin (1995) also noted the importance of collaborative and cooperative learning. Webb (1991) has also described how students tended to help one another when they worked in small groups. Collaborative learning also provides the social support and scaffolding that students need to move learning forward. Hence, through seeking social assistance strategy activities the importance of team work, the skills to utilize social support systems, successful peer group problem solving and analyzing choices in academic help seeking skills were emphasised.

Objectives

To develop a training module to enhance the SRL of adolescents.

To assess the effectiveness of the training program in enhancing the SRL of adolescents.

Hypotheses

There is a significant difference in the students' use of self-regulated learning strategies in control and experimental group due to intervention.

There is a significant improvement in the students' use of self-regulated learning strategies of experimental group due to intervention programme.

RESEARCH METHOD

This study adopted quasi-experimental design. Two group pre-test,

post-test non equivalent groups design was utilized in this study. An activity oriented training module is developed to promote the utilization of adolescents' SRL strategies, viz. self-evaluation, goal setting & planning, environmental structuring, rehearsing & memorizing and seeking social assistance. The sample of this study comprise of 87 students of two sections from ninth standard of Dolphin matriculation school and Grace Matriculation School in Madurai city. The students were selected and assigned randomly to control and experimental groups. The pre-test was administered to both groups and the homogeneity was established. The control group did not receive any treatment whereas the experimental group received training for 28days. After completion of the training, post-test was administered to both groups. Self-Regulated Learning Scale by Kadhiravan (1999) was used to collect the data along with the personal data sheet. This scale consisted of 40 items with 5 response categories. The test retest reliability of this scale is 0.794 and predictive validity 0.897.

Results and Discussion

Table: 1 shows the pre-test comparison of control group and experimental group of students. There is no significant difference in the control and experimental group students in the pre-test of five SRL strategies. This ensured the homogeneity of the control and experimental group.

Table:1 Pre-Test comparison of Self-Regulated Learning of students in control and experimental group

Dimensions	Control Group N1		Exp. Group N2		't' - value
	M1	SD1	M2	SD2	
Self-evaluation	9.85	1.78	10.09	2.5	0.497 NS
Goal setting & planning	9.57	2.09	9.17	2.82	0.750 NS
Environmental structuring	8.43	2.92	9.11	2.88	1.093 NS
Rehearsing & memorizing	9.43	1.95	9.57	2.74	0.288 NS
Seeking social assistance	8.8	2.77	9.32	3.02	0.830 NS
Total SRL	46.08	6.54	47.26	9.59	0.093 NS

NS - Not Significant

Table: 2 shows post-test comparison of students SRL in control group and experimental group. It is vividly seen from the results of the post-test of SRL strategies that, the intervention program has an effect on enhancing the self-regulated learning of students. 't' values are significant for self-evaluation, goal setting & planning, environmental structuring, rehearsing & memorizing, seeking social assistance and students' total SRL. This result has been supported by Weinstein et al. (2000), Hofer and Shirley (2003) and Schmitz & Wieze (2006). Weinstein et al. study has shown that trained students were better able to transfer what they learned in that course to other learning situations.

Table:2 Post-Test comparison of Self-Regulated Learning of students in control and experimental group

Dimensions	Control Group N1		Exp. Group N2		't' - value
	M1	SD1	M2	SD2	
Self-evaluation	9.68	1.93	11.73	2.57	2.628*
Goal setting & planning	8.95	2.29	10.98	3.52	3.274*
Environmental structuring	8.85	3.00	10.72	2.33	3.224*
Rehearsing & memorizing	9.38	1.96	11.06	2.43	3.574*
Seeking social assistance	8.98	2.76	10.84	2.26	3.444*
Total SRL	45.83	6.89	55.33	14.72	3.946*

*- Significant at 0.05 level

Table: 3 shows pre-test and post-test comparison of experimental group students' self-regulated learning. 't'-values are significant for all the five dimension of SRL strategies and students' total SRL. This denotes that the intervention program have significantly promoted the students' self-regulated learning.

Table:3 Self-regulated learning of students in experimental group before and after the intervention

Dimensions	Pre-test		Post-test		't' - value
	M1	SD1	M2	SD2	
Self-evaluation	10.09	2.5	11.73	2.57	3.135*
Goal setting & planning	9.17	2.82	10.98	3.52	2.751*
Environmental structuring	9.11	2.88	10.72	2.33	2.979*
Rehearsing & memorizing	9.57	2.74	11.06	2.43	2.789*
Seeking social assistance	9.32	3.02	10.84	2.26	2.762*
Total SRL	47.26	9.59	55.33	14.72	3.149*

NS - Not Significant

In Hofer and Shirley's (2003) learning to learn course, trained students have shown increased mastery orientation, self-efficacy, and decreased test anxiety after the completion of the course. Schmitz & Wieze (2006) also reported that significant improvement in SRL after training in students' intrinsic study motivation, self-efficacy, attention, self-motivation, handling distraction and procrastination. It is concluded from the results that, there is a significant difference in the self-regulated learning of adolescents due to training. Proper training to students will not only enhance students' SRL, it will also significantly decrease the burden of schools, teachers and parents

Suggestions and conclusion

Educators need to accept the role they can play in their learners' use of self-regulation and respond to this responsibility by providing learning environments that facilitate or support self-regulation. It is the right time to plan long term interventions, which will provide enough opportunity to students to practice and automate strategy use in order to facilitate transfer to other learning situations. In present academic setting, there is need for developing suitable model for learning academic curriculum based on self-regulated learning approach rather than depending on classroom learning supported by teachers. If students are encouraged to steer their learning on their own, they can also take responsibility for their career options, in turn we can mould responsible citizens.

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OVERVEIW OF TRAINING MODULE

SRL Strategy	Goals	Methods & Delivery	Theoretical background
Goal setting & Planning	• Improve the understanding of goals • Learning how goals directs our behaviour • Process of goal setting • Discriminating Learning and performance goals	• Overview of the Goals, long term goals, short term goals, and immediate goals. • SMART goals. • Enhancement of academic proximal goal setting. • Facilitating students' planning to their academic goals.	➢ Wolters (1998) ➢ Zimmerman & Kitsantas (1996) ➢ Zimmerman Bonner & Kovach (1996)
Rehearsing & Memorizing	• Learning meaningfully • Importance of previous experience • Utilization of mnemonics	• Short introduction about functioning of memory. • Activities intending meaningful learning. • Mastering cognitive strategies viz. Rehearsal, elaboration and organization. • Planning elaborative rehearsal in school. • Various ways of improving memorization. • Exercising mnemonics to improve memorization.	➢ Beaty (2006) ➢ Ormrod (2000)
Environmental Structuring	• Differentiating hearing from listening • Focused attention • Structuring the conducive environment	• Analysing how students perceive their environmental disturbances. • Understanding how disturbances affect their goal directed activity. • Exploring the ways of mastering their distraction.	➢ Boekaerts & Corno (2005) ➢ Hofer et al., (1998)
Self-Evaluation	• Role of feedback • Interest and learning	• Forming realistic understanding of one self. • Monitoring one self in order to know how they are progressing. • Seeking external feedback from peers, teachers and parents. • Understanding how self-evaluation affects your further planning.	➢ Zimmerman Bonner & Kovach (1996)
Seeking Social Assistance	• Utilization of support system • How group work facilitate problem solving • How team work achieve success • Opportunities for help seeking	• Exploration of situations in which we see the need for help. • Individuals' willingness to help seeking. • Opportunities to work together inside and outside the class.	➢ Zusho et al. (2007) ➢ Ryan & Pintrich (1997)

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