



The Relationship Between Metacognition and Career Maturity Among Adolescents

KEYWORDS

Metacognition, career decision making & adolescents

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ABSTRACT *BACKGROUND: Metacognition has emerged as a key concept which has been studied in relation to many aspects of learning. It has been indicated that metacognitive processes play a role in decision making of individuals. Several theories of career decision making explicitly or implicitly speak of the role of metacognition in career decision making.*

METHOD: This current study examines the relationship between metacognition and career maturity in adolescents in the age range of 16-18 studying in II year Pre- University/ 12th standard (n=60). Two standardized tools were used in the research, Metacognitive Awareness Inventory and Career Maturity Inventory (Indian Adaptation). Two groups of students, Group A (students studying in the Science Stream) and Group B (students studying in the Arts Stream) were compared.

RESULTS: The data findings suggest that metacognition level and career maturity was not significantly related. There were no significant gender differences on all parameters. Though the level of meta-cognitive awareness was not significantly different between the groups there was a significant difference in self-appraisal component of career maturity.

CONCLUSION: The role of metacognition in career decision making needs to be explored in more detail in a larger sample.

INTRODUCTION:

The concept of career maturity was initially introduced as vocational maturity by Donald Super in 1955. Career maturity has been defined as "the degree to which an individual exhibits career behaviors and choices that are appropriate for his or her age" (Super, 1957 as cited in Wu, 2009, p. 5). Career maturity in adolescence requires a tentative career decision, and knowledge about educational and occupational choices. An understanding of the level of career maturity is essential for good career guidance (Coertse & Schepers, 2004).

Metacognition and career decision making. Metacognition has been defined in cognitive psychology as a form of executive control involving monitoring and self-regulation (Lai & Viering, 2012). It is an important aspect of career decision making (Lemini, 2005). It is relevant in the context of career counseling as self-appraisal of one's abilities, ability to appraise tasks and strategize ways of working will aid the individual in making the right career choice (Schraw & Dennison, 1994). Theories of career development like Cognitive Information Processing theory address the metacognitive component explicitly while Learning theory of Krumboltz, Social Cognitive Career Theory and Career mindset framework incorporates this concept implicitly (as cited in Lemini, 2005). Integration of metacognition is expected to increase the benefits of career counseling (Lemini, 2005). Individuals who display higher levels of metacognitive activity have been seen to have a higher level of career decidedness (Kosine, Steger, & Duncan, 2008).

The aim of the present study was to explore the relationship between general metacognitive awareness and career maturity of individuals. We also aimed to study if significant differences existed between genders and between different streams of study.

METHOD

60 Children who are studying in II Year Pre- University in the Science (Group A- n=30) and Arts stream (Group B- n=30) who were a part of a larger study were taken for the current study. Informed consent was obtained from parents and the students and CMI (Career Maturity Inventory) and MAI (Metacognitive Awareness Inventory) was administered to both the groups.

Tools:

Career Maturity Inventory (CMI). It was developed by Crites in 1978 and adapted for Indian conditions by Dr. Nirmala Gupta (1989). The inventory has 2 scales: Attitude Scale and Competence Scale. Five attitudinal variables which are assessed are decisiveness in career decision making, involvement in career decision making, independence in career decision making, orientation in career decision making and compromise in career decision making. The five parts of the Competence scale are self-appraisal, occupational information, goal selection, planning and problem solving.

Metacognitive Awareness Inventory. (Schraw, & Dennison, 1994). It is a 52 item inventory to measure metacognitive awareness. The scale gives the following sub scales under the knowledge of cognition factor: declarative knowledge, procedural knowledge and conditional knowledge. The subscales under the regulation of cognition factor are planning, information management strategies, comprehension monitoring, debugging strategies and evaluation.

Statistics: In view of the small sample and non-normality, all data are presented as Median and Inter-quartile range (IQR). The test scores were compared between the groups using Mann Whitney U Test. Spearman Rank Order Correlation was used to assess the association between career maturity and metacognition. The analysis was conducted

using SPSS V21. Statistical significance was considered at $p < 0.05$.

RESULTS:

Table 1: Descriptive statistics for Group A and B.

Group	Group A				Group B			
	Male		Female		Male		Female	
	Median	IQR	Median	IQR	Median	IQR	Median	IQR
CMI Attitude	26	6	24	5	31	9	31	16
Self-Appraisal	5	2	7	4	8	3	7.5	3
Occupational Information	7	6	9	3	7.5	4	8.5	5
Goal Selection	5	5	6	3	7	6	6	5
Planning	4	5	7	4	6	5	8	2
Problem Solving	4	2	4	3	5	3	4.5	3
MAI	34	13	40	9	35	6	37	11
Knowledge about Cognition	12	6	12	4	11	5	13	4
Regulation of Cognition	23	7	27	7	25	5	24	7

Table 2 showing correlation results for metacognition and career maturity.

Variables		Spearman Correlation		
		MAI total	Knowledge about cognition	Regulation of cognition
CMI Attitude	Correlation Co-efficient (ρ)	0.71	0.044	0.130
	P value	0.592	0.739	0.323
Self-Appraisal	Correlation Co-efficient (ρ)	0.42	-0.025	0.108
	P value	0.750	0.847	0.412
Occupational Information	Correlation Co-efficient (ρ)	0.162	0.090	0.162
	P value	0.216	0.493	0.216
Goal Selection	Correlation Co-efficient (ρ)	0.152	0.082	0.150
	P value	0.247	0.535	0.254
Planning	Correlation Co-efficient (ρ)	0.068	0.012	0.043
	P value	0.600	0.929	0.747
Problem Solving	Correlation Co-efficient (ρ)	-0.003	-0.047	0.027
	P value	0.983	0.720	0.839

* $p < 0.05$ level

Table 3 showing comparison of metacognition and career maturity between male and female participants

Parameters	P value	Parameters	P value
CMI Attitude	0.588	MAI Total	0.689
Self-Appraisal	0.220	Knowledge about Cognition	0.561
Occupational Information	0.399	Regulation of Cognition	0.667
Goal Selection	0.947		
Planning	0.117		
Problem Solving	0.606		

Table 4 showing comparison of metacognitive awareness and career maturity between Groups A and B

Parameter	P value	Parameter	P value
CMI Attitude	0.068	MAI Total	0.941
Self-Appraisal	0.008*	Knowledge about Cognition	0.531
Occupational Information	0.899	Regulation of Cognition	0.738
Goal Selection	0.422		
Planning	0.098		
Problem Solving	0.059		

* $p < 0.05$ level

Spearman Rank Order Correlation revealed that there is no significant relationship between metacognition and various aspects of career maturity (Table 2). On the Mann Whitney U test no significant gender differences were seen in aspects of career maturity and metacognition (Table 3). The arts and science streams did not differ significantly on aspects of metacognition while they was a significant difference seen in self-appraisal component of career maturity (Table 4).

DISCUSSION:

The aim of the present study was to explore the relationship between metacognition and career maturity. Research on metacognition has till now been limited to several aspects of teaching and learning. Metacognition has been conceptualized as a multidimensional general set of skills (Schraw 1998 as cited in Lai, 2011). The need to assess metacognition as a general skill rather than a domain specific skill and the need to relate metacognition to various activities involving cognitive components like decision making has been stressed by Veenman, Van-Hout – Walters, Afflerbach (2006). Research on the relationship between metacognition and career decision making is limited and inconsistent. Metacognition was found to be positively related to career decidedness (Symes & Stewart, 1999).

However in the present study no significant relationship was found. This may be explained by the small sample size. Several theories of career decision making and career development include the role of metacognitive aspects and the results of this study propose the need to further explore this relationship. It also brings up the question if metacognition is a general skill or a domain specific skill. Difficulties in the assessment of metacognition have also been highlighted in literature (Lai, 2011). Hence the present results could be influenced by this factor.

Previous research on gender differences in metacognition is inconsistent with some studies reporting no significant differences based on gender while others have found the opposite (Liliana & Lavinia, 2011). Gender was seen to have no significant role on level of career maturity indicating that both males and females had similar career maturity levels. This could be due to similar levels of exposure to career related information to both sexes due to increasing importance given to female education in India. This supports previous research findings (Salami, 2008). Similarly male and female participants had similar levels of metacognitive activity both in knowledge of cognition and regulation of cognition aspects. However participants studying in Arts and Science streams differed in self-appraisal component of career maturity. This aspect of career decision making may have been instrumental in influencing the

choice of stream of study.

SUMMARY AND CONCLUSION

Metacognition was not seen to have a strong relationship with career maturity. The results of the present study brings out the need to develop tools that are specific to aspects of metacognition involved in the decision making process. Further research with a larger sample size may bring out more significant results. Researchers can also concentrate on developing domain specific measures for assessment of metacognitive elements of the career decision making theories.

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