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Relation Among Meta-Cogntition Level, Decision Making, Problem Solving and Locus of Control in a Turkish Adolescent Population

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Abstract

Whereas human beings are only seem to" have" cognitive processes they have knowledge about the process itself as well. This process, which is known as metacognition should be taken as a system responsible for the proper functioning of whole memory system via its executive role in information processing. Although some differences on naming and definition of the term metacognition in literature an agreement among researchers seem to occur on the fact that metacognition has two general aspects; monitoring and control. When taken from a developmental perspective an increment takes start in information processing capacity and functionality of cognitive functions directly related with executive functions including non-verbal reasoning, decision making, problem solving, abstracting, using the acquired information and producing new information of adolescents by the age 11 which is the onset of the formal operational stage. Thus level of metacognitive development might be an indicator and predictor of the general developmental status of executive functions such as decision making in adolescents. In this research we tried to investigate the relation among the metacognition level, decision, problem solving and locus of control.

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*Keywords:*Metacognition, Decision Making, Problem Solving, Locus of Control

1. Introduction

Information as it is processed through cognitive processes such as problem solving, imagination, reasoning, abstracting and judging is represented in human thought with its final version (Solso, Maclin and Maclin, 2009). From this point of view people not only have cognitive processes but also do have knowledge about knowledge itself (Garner and Alexander, 1989). With this aspect "metacognition" comes into prominence as an fundamental

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and executive feature of human mind (Yzerbyt, Lorries and Dardenne, 1998). In Flavell's theory, in general, cognition and metacognition differ on content and function but retain the same qualitative features. Metacognition is defined as thinking about thinking or a psychological phenomenon including someones feelings and motives about him/herself and about others (Flavell, 1979). According to Vos (2001), function of cognition is about problem solving and carrying out cognitive attempts in general. On the other hand metacognition is about making regulations related with necessary cognitive steps.

Whereas some differences among researchers can be seen on naming and defining "metacognition" as a concept (executive cognition, executive control, self-regulation, meta-knowledge, cognitive awareness etc) a consensus seem to occur among them recently that metacognition has two general aspects: A cognitive domain including knowledge someone has about reading, memory and learning . Second aspect is a monitoring function including planning, monitoring and evaluation providing control of cognitive processes (Flavell, 1979; Brown, 1987; Lucengeli and Cornoldi, 1997; Schraw and Dennison, 1994; Schraw, 1998; Stenberg, 1998; Yzerbyt, Loris and Dardenne, 1998). Metacognition, as a concept including both monitoring and regulating processes together, was asserted firstly in the 1976 study of Flavell, in which these processes were defined as metacognitive strategies (activities). The term metacognitive strategy refers to the regulated processes that are used in order to monitor metacognitive progress, achievement of cognitive goals and to execute control on cognitive activities. For a person with metacognitive skills and awareness these metacognitive processes are means of checking his/her learning progress, planning and exerting changes on ongoing cognitive activities, monitoring and comparing cognitive outputs with internal and external criteria.

Adolescence is a critical period in human life in the sense that an era of prominent qualitative changes in cognitive processes and abilities takes start. By the onset of formal operational stage an accelerated development in executive functions related to metacognitive skills including, as well as decision making and problem solving, non-verbal reasoning, abstracting, using gained knowledge and understanding begin to erupt in sense of both information processing speed and capacity (Ormond, Mann and Luszcz, 1987; Stewart et al, 2007). These increased capacity and efficiency of the cognitive infrastructure during adolescence give rise to a higher level of cognition: Metacognition. In another words developmental level of metacognition can be taken as a prominent indicator of general integration level of high-order or executive functions.

Adolescence also is a critical developmental period that an increase in educational, family and social demands is also prominent in addition to the increase in cognitive and metacognitive skills. Young individual has to face with making serious decisions that have long-lasting consequences, domains necessitating problem-solving skills, problematic social interactions with family and peers needed to be resolved etc. Findings in literature indicate that metacognitive level of an adolescent might be an indicator of his or her success in dealing with these problematic environmental features. So it is important to understand the relation among metacognitive level and related, socially necessary skills in terms of adaptation, such as decision making, problem solving and locus of control. Rather than working on those skills separately focusing on helping adolescents with developing their metacognitive abilities as a whole might be much more efficient during their both formal and informal education in order to raise self-competent and cognitively effective individuals.

In this study we aimed to investigate whether adolescent with different levels of metacognition, as measured by metacognitive awareness inventory, also differ in their cognitive abilities like decision making, problem solving and their locus of control as well. Relation among these has not been investigated before in context of Turkish adolescents. Thus it is important to investigate this possible relationship since level of metacognitive development, on its own, is an indicator of integration of the developing cognitive subsystems asserted above. Thus, it is plausible to expect that participants with the highest metacognitive development level will also display higher scores in other test domains like decision making and problem solving as well.

2. Materials and Method

A total of 105 adolescents ages ranging between16-18 (X=17.08) chosen from a pool of 250 participants took place in this study. They were given B-Form of the Metacognitive Awareness inventory (Howard, Miller and Murphy), Adolescent Decision Making Questionnaire (Mann, Harmoni and Beswick,1989), Problem Solving