



METACOGNITIVE STRATEGIES AS A FACTOR IN ADOLESCENTS' INTELLECTUAL DEVELOPMENT

<https://doi.org/10.57033/mijournals-2026-3-0311>

Ulguz Nazirova

Independent Researcher, Karshi State University, Uzbekistan

Abstract. *Adolescence is an important developmental period in which intellectual activity becomes increasingly conscious, independent and strategically organised. An important component of this process is metacognition, which enables adolescents to understand, monitor and regulate their own cognitive activity. This paper examines the role of metacognitive strategies in adolescents' intellectual development, with particular attention to planning, self-monitoring, strategy selection, evaluation of understanding and regulation of learning activities. Metacognitive development allows adolescents not only to acquire information but also to determine how effectively they understand and process it. The ability to recognise difficulties, select appropriate cognitive strategies and modify ineffective approaches contributes to more independent problem solving and intellectual activity.*

Keywords: *adolescence, intellectual development, metacognition, cognitive strategies, self-monitoring, independent thinking, learning regulation.*

INTRODUCTION

Adolescence is characterised by significant changes in the organisation of intellectual activity. As educational and social demands become more complex, adolescents are increasingly expected to analyse information independently, identify relationships between different sources of knowledge, solve unfamiliar problems and justify their conclusions. Successful performance in such situations depends not only on the availability of knowledge or general cognitive ability but also on the adolescent's capacity to organise and regulate his or her own thinking. In this context, metacognition becomes an important psychological mechanism of intellectual development. Flavell described metacognition as knowledge and cognition about cognitive phenomena, emphasising an individual's awareness and regulation of cognitive processes (Flavell, 1979).



MAIN PART

Metacognitive activity enables adolescents to move from simply performing an intellectual task towards understanding how that task is being performed. For example, when reading complex material, an adolescent may recognise that a particular section has not been fully understood, return to it, compare it with previous information or select another strategy for comprehension. Similarly, when solving a problem, the individual may plan a sequence of actions, evaluate whether the chosen approach is effective and change it if necessary. These processes demonstrate that intellectual development includes not only cognitive operations themselves but also the ability to regulate those operations consciously (Schraw & Moshman, 1995).

Planning is one of the important components of metacognitive regulation. Before solving an intellectual problem, an adolescent needs to understand the task, identify available information, determine what additional information may be required and select an appropriate strategy. More developed planning allows intellectual activity to become systematic rather than impulsive. This is particularly important during adolescence because educational tasks increasingly require several interconnected cognitive operations. Instead of immediately attempting to produce an answer, the adolescent learns to analyse the structure of the problem and organise cognitive resources according to its requirements.

Self-monitoring is another central mechanism. It refers to an individual's ability to observe and evaluate the progress of his or her own cognitive activity. Effective monitoring helps adolescents distinguish between genuine understanding and a simple feeling of familiarity with information. This distinction is important because students may sometimes believe that they have understood educational material simply because they recognise the words or have previously encountered the topic. Metacognitive monitoring encourages a more critical question: can I explain this information, apply it, or use it to solve a new problem? Such self-evaluation contributes to deeper intellectual processing.

Metacognitive strategies are also closely related to cognitive flexibility. An adolescent who relies rigidly on one familiar method may experience difficulty when a task changes or when the initial strategy does not produce the expected result. More flexible intellectual activity requires recognition that an approach is ineffective and willingness to select an alternative. This ability is important not only in formal learning



but also in everyday problem solving, where situations rarely have a single predetermined solution. Thus, the regulation of cognitive strategies can contribute to the development of adaptability in intellectual activity.

Language has an important mediating function in metacognitive processes. Internal questions such as “What do I already know?”, “What is the main problem?”, “Why did this strategy fail?” or “How can I verify this conclusion?” allow adolescents to organise and monitor their thinking through verbal means. From a psycholinguistic perspective, language therefore functions not only as a means of expressing a completed thought but also as an instrument for regulating cognitive activity. Vygotsky’s theoretical approach is particularly relevant here because it emphasises the transformation of socially mediated speech into an instrument of internal psychological regulation (Vygotsky, 1986).

The development of metacognition is also associated with the adolescent’s ability to explain his or her own reasoning. When students are asked only to provide a correct answer, the cognitive process leading to that answer may remain implicit. In contrast, explaining why a particular conclusion was reached requires the individual to reconstruct and verbalise the sequence of reasoning. Such explanation creates opportunities to identify logical gaps, contradictions or insufficient evidence. Consequently, verbalisation of reasoning can perform both communicative and regulatory functions in intellectual development.

Educational interaction can play a significant role in strengthening these abilities. Teachers can encourage metacognitive development by asking adolescents to compare different ways of solving the same problem, explain why they selected a particular strategy, identify difficulties encountered during a task and evaluate the reliability of their own conclusions. These activities differ from the simple transmission of ready-made knowledge because they direct attention towards the process of thinking itself. Over time, external questions posed by a teacher can become internal questions that adolescents use independently when regulating their intellectual activity.

An important characteristic of metacognitive development is the gradual transition from external regulation to self-regulation (Kuhn, 2000). Younger learners often depend heavily on adults to organise tasks, identify errors and indicate appropriate strategies. During adolescence, however, opportunities for independent intellectual activity expand considerably. Adolescents increasingly need to determine goals, plan their work, evaluate



information and control the quality of their own performance. The development of these abilities contributes to intellectual autonomy and prepares individuals for educational and professional situations in which external guidance is limited.

Individual differences in metacognitive abilities should also be considered (Veenman, Van Hout-Wolters & Afflerbach, 2006). Two adolescents with similar levels of knowledge may demonstrate different performance because one is better able to plan, monitor and adjust cognitive activity. One student may continue using an ineffective strategy without recognising the problem, while another may detect the difficulty and change the approach. Therefore, differences in intellectual performance cannot always be explained solely by differences in knowledge or general intellectual ability. The quality of cognitive self-regulation may also contribute substantially to these differences.

From a developmental perspective, metacognition can therefore be regarded as a mechanism connecting knowledge, language and intellectual self-regulation. Knowledge provides the material for thinking, language provides tools for representing and analysing that material, and metacognitive processes allow the adolescent to organise, monitor and modify intellectual activity. Their interaction creates conditions for more independent, flexible and consciously controlled thinking.

CONCLUSION

Metacognitive strategies represent an important psychological factor in adolescents' intellectual development. Planning, self-monitoring, evaluation of understanding, strategy selection and cognitive flexibility enable adolescents to regulate their intellectual activity rather than simply respond to educational tasks. These abilities contribute to independent problem solving and allow adolescents to recognise and correct ineffective approaches.

REFERENCES

1. Flavell, J. H. (1979). Metacognition and cognitive monitoring: a new area of cognitive-developmental inquiry. *American Psychologist*, 34(10), pp. 906–911.
2. Kuhn, D. (2000). Metacognitive development. *Current Directions in Psychological Science*, 9(5), pp. 178–181.
3. Schraw, G. & Moshman, D. (1995). Metacognitive theories. *Educational Psychology Review*, 7, pp. 351–371.
4. Veenman, M. V. J., Van Hout-Wolters, B. H. A. M. & Afflerbach, P. (2006). Metacognition and learning: conceptual and methodological considerations. *Metacognition and Learning*, 1, pp. 3–14.
5. Vygotsky, L. S. (1986). *Thought and Language*. Cambridge, MA: MIT Press.