CogniQuest

Teaching Guide

An Introduction to Metacognition, its Origins and Potentials

Co-funded by
the European Union

INTRODUCTION

Context

This guide is part of the CogniQuest project, a European initiative aimed at strengthening the metacognitive skills of pupils aged 8 to 12.

The project's main goal is to support students in developing their metacognitive skills through individual learning process and develop their learning-to-learn skills and lifelong learning competencies.

The Cogniquest project offers innovative and inclusive tools, adapted to the needs of teachers and students, to develop metacognitive skills at school. Metacognition, or reflection on one's own learning process, fosters critical thinking, autonomy and self-confidence.

The resources developed as part of this project enable us to analyse learning strategies and support each student along his or her learning path. The aim is to reinforce essential skills for lifelong learning.

CogniQuest is driven by a European partnership that brings together organisations from five countries - France, Belgium, Croatia, Greece and Poland - around a common goal: to make learning more effective, inclusive and adapted to the challenges of the 21e century.

All resources are freely accessible on the project website.
cogniquest.eu

Objectives

This educational guide is aimed primarily at teachers working with pupils aged 8 to 12.

It aims to:

- **Define metacognition and demonstrate its benefits:** Offer a clear understanding of this concept and highlight its positive impact on student autonomy, motivation and success.
- **Offer practical, applicable tools:** Provide concrete, accessible strategies for integrating metacognition into everyday teaching practices.
- **Responding to the diversity of learning profiles:** Providing solutions adapted to the varied needs of students, including those with special needs (learning disabilities, allophone students, etc.), to make learning more inclusive.
- **Support students' commitment and self-esteem:** Encourage students to take ownership of their learning by developing their ability to reflect on, evaluate and adjust their strategies.
- **Exploring the contemporary challenges of metacognition:** Analyse the current challenges of integrating metacognition into education systems, while offering ways to better adopt it through innovative and inclusive policies.
- **Preparing students for the challenges of the 21e century:** Highlighting the relevance of metacognition in developing transversal skills, strengthening citizenship and fostering lifelong learning.

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PART 1

GENERAL PRINCIPLES OF METACOGNITION

Metacognition, or the art of reflecting on one's own learning process, is now recognised as a key skill to help students better understand how they learn, identify their strengths and challenges, and become more self-reliant. Introduced in the 1970s, this concept has profoundly transformed the way we think about education, placing the emphasis not only on what students learn, but also on how they learn.

This first part explores the foundations of metacognition and its importance in the development of educational skills. It is based on three main themes:

A - Definition and principles of metacognition: A clarification of the concepts of cognition and metacognition, accompanied by a look at the history and key dimensions of this concept.

B - Metacognitive skills: A presentation of the tools and strategies that enable students to develop transferable skills, essential for navigating varied learning environments. We'll also explore why 8–12-year-olds are particularly receptive to these approaches.

C - The current state of metacognition in European school systems: An analysis of the advances and challenges encountered in integrating metacognition into European educational policies, as well as ways to better promote it in the classroom.

A - DEFINITION AND PRINCIPLES OF METACOGNITION

Definition and dimensions of metacognition

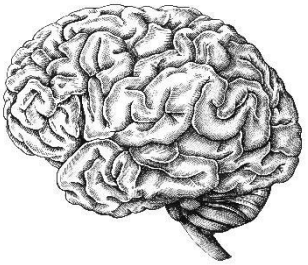
Metacognition, often described as "thinking about thinking", refers to an individual's ability to reflect on his or her own learning processes. It involves awareness of the strategies used to learn, active regulation of these strategies, and the ability to evaluate their effectiveness.

It is based on three fundamental dimensions: planning, monitoring and evaluation.

- **Planning:** This phase involves defining objectives, mobilising pre-existing knowledge and developing appropriate strategies to accomplish a task.
- **Follow-up:** During the learning process, the individual monitors his or her progress, adjusts his or her pace and checks that the information has been understood.
- **Evaluation:** Once the task has been completed, this stage involves judging the effectiveness of the strategies employed, identifying areas for improvement and drawing lessons for the future.

A short story: the emergence of a concept

Introduced by American psychologist John Flavell in 1976, the concept of metacognition has transformed educational psychology. Flavell (1979) emphasised the importance of human metacognitive abilities. He believed that self-reflection and the pursuit of self-knowledge at the meta-level fulfil important functions in regulating and monitoring the development of the human individual. He believed that through self-reflection, the human being can penetrate deep into their thoughts and analyse them in order to then take appropriate regulatory and corrective action. Defined as "knowing what you know and what you don't know", metacognition enables students to develop autonomy, resilience and critical thinking skills. Today, research continues to underline its importance for educational success and beyond.



The difference between cognition and metacognition

Cognition refers to the fundamental processes involved in acquiring, processing and storing information, such as perception, attention and problem-solving (Hilgard, 1987). Metacognition, on the other hand, involves understanding and regulating these cognitive processes (Flavell, 1976). If cognition moves us forward in a task, metacognition controls progress through strategies such as planning, monitoring or evaluation (Baker, 2013). It thus encompasses cognition while optimising its effectiveness.

B - METACOGNITIVE SKILLS

Tools for learning to evolve

Metacognitive skills, such as self-reflection, self-assessment and planning, play a central role in developing autonomy and optimising learning.

These skills include:

- **Self-reflection:** the ability to analyse one's thoughts and actions to understand what's working and what needs improvement.
- **Self-assessment:** the ability to critically evaluate one's performance and identify strengths and areas for improvement.
- **Planning:** the ability to organise one's work, define objectives and anticipate the steps needed to achieve them.

Let's take the example of preparing a presentation. A student begins by planning his work, identifying the necessary sources and setting a timetable. He then monitors his progress, adjusting his methods where necessary (for example, by simplifying his notes or expanding on a point). Finally, he evaluates the results obtained, taking into account feedback from his peers and teacher. This process illustrates how metacognition structures learning, helps overcome obstacles and supports progress.

Universal, transferable skills

Universal and transferable, these skills are essential for meeting academic and professional demands. Reflection enables us to analyse our actions and learn from them, while self-regulation helps us to manage time, effort and emotions, by breaking down complex tasks to avoid the impression of overload. Finally, critical thinking enables us to assess the relevance of information and methods, for example, when selecting reliable sources.

These practices, integrated into teaching, not only transform the way students learn, but also strengthen their capacity to adapt and evolve. By equipping them with the tools to reflect on and manage their course independently, metacognition prepares them to meet tomorrow's challenges with resilience and effectiveness.

Why teach metacognition to 8–12-year-olds?

Between the ages of 8 and 12, children develop essential cognitive skills, such as reflection and self-assessment (Piaget, 1964). Introducing metacognition at this age enables them to acquire strategies for planning, monitoring and evaluating their learning. Studies show that these skills enhance autonomy, motivation and academic success (Baker, 2013). Indeed, students, even from early primary grades, who are taught to use a variety of cognitive and metacognitive strategies have greater gains in metacognitive awareness and academic achievement than students who do not receive such training, and more specifically display successful outcomes that are obtained; in reading, writing, mathematics and science (Baker, 2013). By learning to "think their thoughts", students build the foundations for lifelong learning.

C - CURRENT STATE OF METACOGNITION IN EUROPEAN SCHOOL SYSTEMS

Integrating metacognition into European education policies

Since the Lisbon Council in 2000, European education policies have paid increasing attention to the development of key competencies, particularly learning to learn, which includes metacognitive dimensions. The Lisbon strategy marked a turning point by introducing a common framework for strengthening social cohesion and economic growth, while meeting the needs of the 21e century. This framework paved the way for initiatives promoting autonomy and lifelong learning, objectives reinforced by the 2018 Council Recommendation, which promotes inclusive and innovative education for all learners.

Disparities in the integration of metacognitive approaches in Europe

European educational contexts show marked disparities in the integration of metacognitive approaches, as revealed by the results of the PISA (2022) and TALIS (2018) surveys. These disparities reflect not only differences in curricula, but also in pedagogical practices and students' schooling conditions.

In France, autonomous learning is still hampered by teacher-centered assessments, but tools such as reflective journals and self-assessment practices are gradually developing, particularly at primary level. Despite this progress, student performance remains a cause for concern: according to PISA (2022), almost one in four 15-year-olds is considered to be under-performing in math, reading and science. These results also reflect significant disparities in the learning environment, which have a direct impact on equity in education.

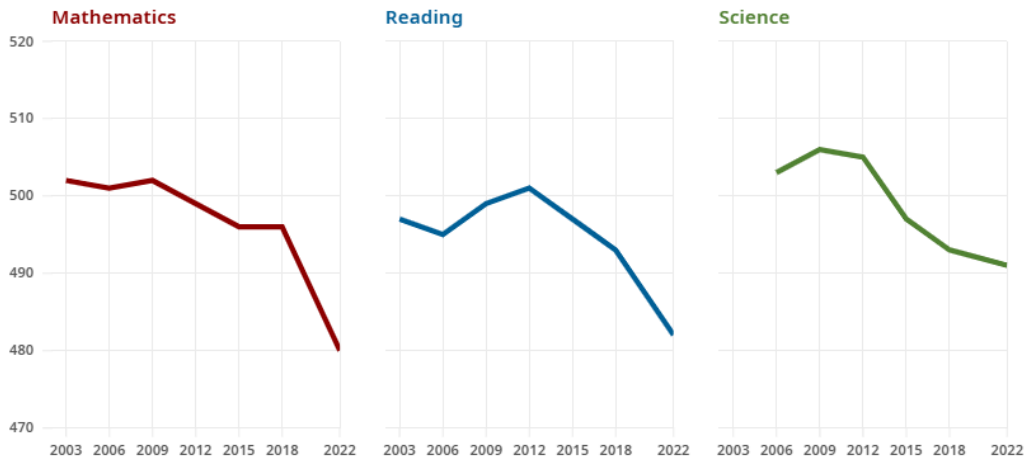
In Belgium, innovative programs promoting self-reflection and collaborative learning are proliferating, but their uptake remains uneven across the country. This regional disparity is sometimes accompanied by tensions over the quality of school

environments, which play a key role in reducing stress and improving the well-being of students and teachers.

In Poland, the introduction of digital tools in the early grades supports student autonomy. The country also boasts one of the lowest dropout rates in Europe (less than 5% in 2024, according to Eurostats), thanks among others to the special attention paid to the school environment and relationships between students and teachers. Polish students maintain a high position in the world in terms of mathematical skills, reading comprehension and reasoning in natural sciences (PISA 2022). However, they are lower than in previous editions of the study in 2018.

In Croatia, educational experiments are seeking to incorporate collaborative strategies, although their widespread adoption remains a challenge. However, the country continues to distinguish itself through initiatives aimed at limiting educational gaps, also helping to maintain low dropout rates.

In Greece, traditional educational structures slow down the adoption of pedagogical innovations. However, a growing openness to metacognitive approaches is perceptible. This could help meet the challenges posed by school results that are still below the European average, as reported in the PISA (2022) studies.



Trends in mathematics, reading and science performance
PISA test scores, OECD average
Source: OECD (2023), PISA 2022 Results (Volume I): The State of Learning and Equity in Education.

These disparities highlight the importance of sharing good practice across Europe. They also underline the need to democratise pedagogical approaches such as metacognition, which not only promote autonomous learning but also help to reduce educational inequalities.

Reinforce training and tools to promote metacognition in the classroom

These examples highlight the coexistence of formal approaches, framed by curricula, and informal ones, driven by individual teacher initiatives. The latter play a key role, but often with limited support in terms of training. The need to strengthen teachers' skills in supporting students is crucial. At present, initial and in-service training programs still deal too little with metacognitive strategies, limiting their widespread dissemination.

In the classroom, tools and methods to promote metacognition are varied but under-utilised. Reflective journals, for example, enable students to record their successes and challenges, while self-assessments encourage them to analyse their learning processes. Interactive digital tools, such as apps that encourage self-regulation, offer interesting possibilities, but remain unevenly deployed. Collaborative activities, which stimulate peer-to-peer exchanges on learning strategies, are also promising, but are still uncommon in some countries.

Despite persistent challenges, a growing interest is emerging in integrating metacognition into educational curricula, illustrated by initiatives such as the CogniQuest project, which brings together five countries around practical, inclusive resources. These efforts aim to fill existing gaps and provide teachers and students with tools that promote learning that is autonomous, equitable and adapted to the challenges of the 21e century. However, to make metacognition a central pillar of education systems, more systematic integration into curricula and enhanced teacher training remain essential.

PART 2

THE CHALLENGES OF METACOGNITION AT SCHOOL

Metacognition, much more than a simple reflection on one's learning, is a powerful lever for transforming educational practices and enabling students to achieve their full potential. By integrating metacognition into the school environment, teachers can provide students with the tools to become autonomous, motivated and resilient learners, capable of meeting academic and personal challenges.

This second part explores the many issues and benefits of metacognition in the school context, organised around two main axes:

A - The pedagogical challenges of metacognition: This section highlights how metacognition fosters student autonomy, enhances motivation and engagement, and adapts to diverse learning profiles. We will also examine its essential role in supporting students with learning disabilities, helping them to overcome the obstacles associated with traditional school environments.

B - The benefits of metacognition at school: Metacognitive approaches do more than just improve academic results. They also contribute to the development of cross-curricular skills such as critical thinking and emotional management, while fostering students' self-esteem and resilience.

A - PEDAGOGICAL ISSUES OF METACOGNITION

Metacognition: a lever for student autonomy

Metacognition plays a central role in developing students' autonomy by teaching them to reflect on their learning strategies. By giving them the tools they need to organise themselves, adjust their efforts and make progress, it helps them become actors in their own academic development. For example, a student who keeps a logbook to record his or her successes and difficulties can identify the most effective methods, adjust his or her strategies and take full ownership of his or her learning. By learning to "learn how to learn", students gain greater autonomy and responsibility, reducing their dependence on the teacher.

This approach prepares them to manage their learning independently, while fostering better organisation and an increased ability to overcome academic challenges.

Strengthening motivation and commitment

Metacognition plays a key role in boosting students' motivation and commitment by enabling them to understand their strengths and challenges. This awareness empowers them to maintain control over their learning, reinforcing their desire to progress and encouraging them to overcome obstacles. When a student identifies a method that works well for them, they are naturally motivated to continue their efforts and explore new strategies. As students gain more control over their learning, they develop greater confidence in their abilities. This enhanced self-esteem encourages them to perceive mistakes and challenges not as failures, but as learning opportunities, thus consolidating their commitment to school.

Responding to the diversity of learning profiles and overcoming barriers associated with learning disabilities

Metacognition is a powerful tool for responding to the diversity of learning profiles, from varied learning styles to specific needs related to learning disabilities. It enables

students to identify the methods that suit them best, and to develop appropriate strategies for overcoming the challenges they encounter in traditional educational environments.

Visual learners, for example, can structure their ideas using mind maps, while auditory learners benefit from recordings or discussions. For students with disorders such as dyslexia, attention deficit disorder or dyspraxia, metacognition offers customised solutions, such as the use of visual aids, audio books or adapted memorisation techniques. These strategies help to compensate for difficulties, increase motivation and foster a proactive approach to learning.

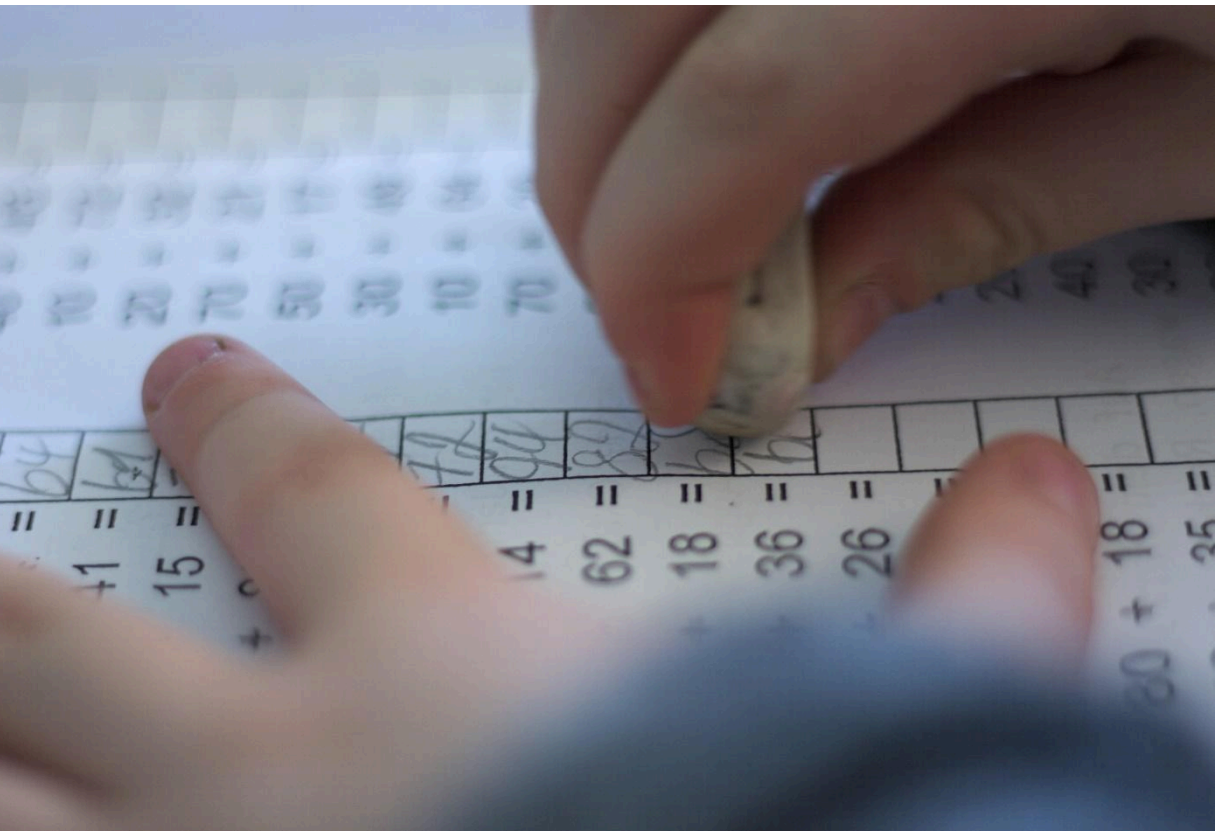
In an often-rigid traditional setting, the fast pace of lessons or inappropriate instructions can exacerbate feelings of isolation and frustration among students with special needs. By introducing metacognitive tools, such as self-questioning techniques (*"What are the key points?"* or *"What's blocking me and why?"*), time management applications like Google Calendar, or voice-reading software, teachers can help students better understand their own learning processes. These adaptations, while supporting comprehension and revision, reinforce students' autonomy and confidence, empowering them to become active and effective learners.

By implementing inclusive metacognitive approaches, teachers create environments where every student, whatever their difficulty, can flourish. This personalisation of learning not only improves academic performance but also prepares students to meet future challenges with autonomy and resilience. Metacognition thus becomes a key to building a more equitable education, where diversity is valued as an asset.

B. THE BENEFITS OF METACOGNITION AT SCHOOL

Improved school results

Metacognition offers many benefits for students, starting with a significant improvement in academic results. By learning to use strategies adapted to their needs, students develop a better understanding of the subjects they are studying. For example, a student who identifies that structured notetaking improves memorisation can adapt this method to other subjects. In addition, metacognition helps them to identify and overcome obstacles to learning by encouraging them to analyse their difficulties and seek solutions, rather than perceiving them as definitive failures.



Developing cross-disciplinary skills

Beyond academic results, metacognition also promotes the development of cross-curricular skills, essential both inside and outside school. It stimulates critical thinking, encouraging students to assess the relevance of the information and methods they use. It strengthens their problem-solving abilities by enabling them to experiment with different approaches to a challenge. By learning to manage their time and effort, they also become more organised and efficient. These cross-disciplinary skills are also developed in a collaborative setting: by sharing their strategies with their peers, students strengthen their team spirit and learn from each other.

By reinforcing cross-disciplinary skills, metacognition also plays a key role in crucial areas such as communication, collaboration and problem-solving. Students who analyse their mistakes and share their strategies with their peers learn to interact better, work as a team and propose appropriate solutions. These skills are not limited to the classroom: they prove invaluable in the workplace, where efficiency and autonomy are major assets.

Impact on self-esteem and resilience

Metacognition plays a key role in building students' self-esteem and resilience. By enabling them to evaluate themselves and regulate their learning, it fosters greater mastery of their skills and greater independence. This ability to make informed decisions increases their self-confidence, encouraging them to take on academic and personal challenges. By clearly understanding their successes and failures, students learn to perceive mistakes not as failures, but as learning opportunities. For example, students who analyse their mistakes after a test to identify their shortcomings will not only be better prepared for the future but will also strengthen their ability to persevere in the face of challenges. This proactive approach nurtures their resilience and prepares them to face complex situations with confidence and determination.
In short, metacognition contributes to a more effective education, equipping students to excel academically, while developing valuable skills for their future lives. It prepares students not only to succeed at school, but also to become self-reliant, confident lifelong learners.

The benefits of metacognition in the acquisition of basic skills

Metacognition plays a central role in the acquisition of basic skills such as reading, writing and numeracy.

In reading, metacognitive strategies such as formulating questions ("What's the main idea? Should I reread this passage?") help students to better understand texts and monitor their comprehension (Şen, 2009). Studies by Garner (1987) and Houtveen & van de Grift (2007) show that students trained to use strategies such as selective reading and monitoring their comprehension do significantly better in this subject.

In writing, metacognition makes it possible to plan, draft and revise more effectively. According to Cer (2019), students who develop these metacognitive skills not only improve the quality of their texts, but also boost their self-efficacy and motivation, two essential factors for academic success. The work of Hayes & Flower (1980) has also shown that revision, as a metacognitive activity, promotes deeper reasoning and a better structure of ideas.

In numeracy, metacognitive processes such as strategy selection and effort regulation are essential for solving complex problems. According to Vula et al. (2017), students trained to ask themselves metacognitive questions ("Does this solution make sense? Have I taken all the information into account?") outperform those receiving traditional instruction. These results corroborate the findings of Fuchs et al. (2006) and Baker (2013), who highlight the link between metacognition and better mathematical performance.

These benefits demonstrate the importance of integrating metacognitive strategies into the teaching of fundamental skills, as a lever for strengthening students' thinking, autonomy and academic success.

PART 3

CHALLENGES AND PROSPECTS OF METACOGNITION

While metacognition is widely recognised for its many benefits, its integration into educational systems is not without its challenges. Between organisational constraints, resistance to change and disparities in access, implementing metacognitive strategies in schools requires a collective commitment and in-depth reflection on its implications.

This third part explores the current limits and future opportunities of metacognition through four axes:

A - Challenges and limits of integration: Analysis of practical obstacles encountered by teachers, such as lack of time and resources, unequal access and institutional resistance to change.

B - Current debates: Reflection on potential risks, such as the over-rationalisation of learning, the impact on inequalities and the role of new technologies.

C - Perspectives for better integration: Proposals for overcoming obstacles, with recommendations for educational policies, innovative approaches and closer collaboration between teachers, students and families.

D - Relevance to contemporary society: discussion of how metacognition helps students meet the challenges of the 21e century, develops citizenship and supports lifelong learning.

A - CHALLENGES AND LIMITS OF INTEGRATING METACOGNITION AT SCHOOL

Lack of time and resources

The first major obstacle is the lack of time and resources available to teachers. School curricula are often overloaded, leaving little room for activities that encourage reflection or self-assessment. Teachers, already faced with numerous demands, sometimes lack the institutional support and appropriate materials to effectively integrate metacognitive approaches. This time pressure reduces the possibility of dwelling on methodologies that encourage students to reflect on their learning.

Unequal access

Inequalities of access are another major challenge. Depending on the socio-economic context, the resources available to promote metacognition vary considerably. In some better-endowed schools, students can benefit from digital tools or specific training, while in others, particularly in rural or disadvantaged areas, these opportunities are limited. These disparities exacerbate gaps in educational success, running counter to the goal of educational equity.

Resistance to change

Lastly, resistance to change remains a notable obstacle. Some teachers, untrained or accustomed to more traditional methods, may be reluctant to adopt innovative approaches such as metacognition. Similarly, some parents may perceive these practices as too abstract or far removed from "traditional" learning, fearing that they will distract students from core subjects. This mistrust sometimes hinders experimentation and the widespread adoption of these strategies.

These challenges underline the need for greater coaching for teachers, increased awareness among families and institutional support to sustainably integrate metacognition into teaching practices.

B - CURRENT DEBATES ON METACOGNITION

Risks of over-rationalising learning

One of the first points of discussion concerns the risk of over-rationalising learning. While metacognition emphasises reflection and analysis of learning processes, some fear that excessive use of these practices could hinder students' experimentation and creativity. By focusing too much on the planning and evaluation stages, students could lose the pleasure of learning spontaneously. To avoid this pitfall, it's essential to strike a balance between structured reflection and free exploration, integrating metacognition as a complement rather than a constraint to learning.

Metacognition and inequality

Another major debate concerns the link between metacognition and educational inequalities. While metacognition can be a powerful tool for supporting students in difficulty or from disadvantaged backgrounds, poor implementation could reinforce existing divides. For example, students with limited access to resources or personalised support may benefit less effectively from metacognitive practices. To meet this challenge, inclusive approaches must be favoured, with resources accessible to all and adapted to the varied needs of students.

Metacognition and new technologies

Finally, new technologies raise questions about their role in the application of metacognition. While digital tools such as interactive applications and self-assessment platforms offer interesting opportunities for facilitating reflection and monitoring learning, they also present dangers. The risk of distraction or hyper-dependence on technology could limit the effectiveness of these tools. Best practice is to use them as teaching aids, integrated into a global approach, rather than as substitutes for traditional learning methods.
These debates underline the importance of thoughtful implementation of metacognition, which takes account of students' needs, promotes equity and encourages reasoned use of the tools available.

C - PROSPECTS FOR BETTER INTEGRATION OF METACOGNITION

Recommendations for educational policies

Educational policies play a crucial role in disseminating metacognition. A first recommendation is to explicitly include metacognition in national curricula, to give it a structured place in educational objectives. This formal integration would raise teachers' awareness and ensure systematic application, rather than leaving it to individual initiatives. By defining clear frameworks and expectations for each school level, decision-makers could contribute to widespread adoption.

Innovative approaches

Innovative approaches are also a promising avenue. The use of digital tools, such as self-assessment applications or interactive platforms, facilitates the implementation of metacognitive practices in the classroom. At the same time, advances in neuroscience are leading to a better understanding of the learning process, providing clues as to how to design strategies that are better adapted to students' needs. These technologies and scientific knowledge can enrich teaching practices, provided they are integrated in a balanced and thoughtful way.

Collaboration between teachers, students and families

Finally, **greater collaboration between teachers, students and families** is essential to consolidate the impact of metacognition. Parents, in particular, have a key role to play in developing metacognitive skills at home. By providing them with tools and advice, schools can involve them more closely in monitoring their children's learning. This synergy between the various players in education creates a coherent environment, where reflection on learning becomes a shared habit.

These perspectives illustrate the steps needed to transform metacognition into a central pillar of education systems, supported by clear policies, modern tools and active collaboration between all players.

D - RELEVANCE OF METACOGNITION TO CONTEMPORARY SOCIETY

Meeting the challenges of the 21e century

Metacognition is emerging as an essential skill for meeting the growing challenges of the 21e century. In an increasingly complex world, marked by constantly changing social and professional environments, the ability to adapt has become indispensable. The COVID-19 pandemic revealed new health and educational challenges, such as the need to adapt quickly to hybrid or distance learning modes. By encouraging reflection on one's own learning processes, metacognition enables students and teachers to better manage these transitions with autonomy.

According to the **OECD Learning Compass 2030**, metacognition, alongside cognition, is among the key skills to be developed to adapt to a labour market transformed by artificial intelligence and rationalisation (OECD, 2023). These skills help students to

better understand their learning processes, develop critical thinking, and cultivate creativity and responsibility.

In addition, metacognition promotes key skills such as critical thinking, essential for analysing complex or contradictory information, and self-learning, crucial for continuing to progress despite disruptions. Recent studies also show that metacognitive strategies reduce stress and anxiety, enhance optimism, and improve social and cognitive skills, while having a positive impact on academic performance (OECD, 2023).
In short, these skills provide individuals with invaluable tools for evolving with resilience in a world marked by rapid and profound change. Metacognition is thus a fundamental lever for transforming learning into an engaging experience, adapted to the challenges of the future.

Contributing to citizenship and lifelong learning and lifelong learning

Moreover, metacognition contributes directly to the formation of autonomous and responsible citizens, capable of reflecting critically on the information they receive and on their own choices. Furthermore, it supports lifelong learning, a necessity in a world where rapid changes in the job market require constant updating of knowledge and skills. Whether for retraining or adapting to new tools, the ability to regulate one's learning becomes a real lever of resilience.

CONCLUSION

OUTLOOK FOR THE FUTURE

This guide highlights the importance of metacognition as a powerful lever for transforming learning and preparing students for the complex challenges of contemporary society. By fostering autonomy, critical thinking and the ability to adapt, it meets the growing needs of an ever-changing world.

Metacognition equips students with the tools they need to analyse and adapt their learning methods, making them more autonomous and better equipped to overcome educational challenges. It improves the effectiveness of learning, increases faith in success, and increases self-confidence, and autonomy, regardless of whether we are talking about a student with learning difficulties, an average student, or a gifted student. Metacognitive skills are important, they help you understand learning processes and how to learn effectively. They allow you to learn faster. This is because learners understand the methods, they need to use to educate themselves, to master new content to educate themselves, and acquire new skills. They can understand why they are encountering difficulties, and they begin to think about what they should do differently to maximise their learning experience. The best practice in teaching is to incorporate metacognitive skills whenever possible.

However, it should be remembered that school education is only one place where the use of metacognitive skills will come in handy. There is probably no place where its achievements could not be effectively used, whether in the fields of humanities, engineering, technology, or social sciences.

To maximise its impact, it is essential to strengthen its integration into national and European educational policies. A systematic approach, which explicitly includes metacognition in curricula, would guarantee equitable and consistent dissemination across all school systems. At the same time, teacher training needs to be prioritised. Giving educators the skills and tools they need to effectively support their students is a key step towards making these practices widespread.

The development of inclusive digital tools also represents a major opportunity. Interactive technologies, when well designed and accessible, can enrich pedagogical

practices and facilitate the implementation of metacognitive strategies. Finally, encouraging research into the benefits and limits of metacognition is essential for refining approaches, adapting methods to different contexts and ensuring their effectiveness.

By fully integrating metacognition into educational systems, we have the opportunity to train more autonomous, critical and resilient learners, ready to meet the challenges of a complex and constantly changing world. It's an investment in a more inclusive, forward-looking education.

KEYWORDS

Collaborative approaches
Teaching methods that encourage group work, the exchange of ideas and the sharing of strategies among peers.

Innovative approaches
New educational methods or tools, such as interactive technologies or neuroscience-based strategies, designed to improve teaching practices.

Autonomous learning
An individual's ability to organise, regulate and evaluate learning independently, without excessive dependence on the teacher.

Lifelong learning
Concept according to which education and training continue at all ages, in order to adapt to personal and professional developments.

Self-reflection
The ability to analyse one's thoughts and actions to understand what works, what needs to be improved, and to learn from one's experiences.

Self-learning
The ability to learn on your own, by identifying your needs, finding the right resources and evaluating your progress.

Self-evaluation
The process by which an individual critically assesses his or her own performance, identifying strengths and areas for improvement.

Self-regulation
The ability to control and adjust emotions, behaviour and strategies to achieve a specific goal.

Key competences
A set of essential skills identified by the European Union, such as learning to learn, necessary for success in personal, social and professional life.

Basic skills
Fundamental skills such as reading, writing and arithmetic, necessary for full participation in social and professional life.

Metacognitive skills
Capabilities such as planning, monitoring and evaluating learning strategies, which enable us to reflect on our own cognitive processes in order to optimise them.

Cross-disciplinary skills
Skills applicable to different contexts and domains, such as critical thinking, problem solving, collaboration and time management.

Cognition
Fundamental processes by which we acquire, process and store information, such as perception, attention and problem-solving.

Curriculum
Structured set of contents, objectives and teaching methods defined within an official educational framework.

Inclusive education
An educational model that aims to integrate all students, whatever their needs, into adapted and equitable learning environments.

Evaluation
The final phase of metacognition involves judging the effectiveness of the strategies employed, identifying areas for improvement and drawing lessons for the future.

Inclusivity
A pedagogical approach aimed at adapting methods and resources to meet the varied needs of all students, including those with special educational needs.

Reflective journal
A tool used to record successes, challenges and learning strategies, and to structure and analyse learning.

Metacognition
Reflection on one's own learning processes, involving planning, monitoring and evaluating the strategies used to learn. It fosters autonomy, critical thinking and efficiency.

Critical thinking
The ability to analyse, evaluate and interpret information to make informed decisions or solve problems.

Planning
The first dimension of metacognition involves defining objectives, mobilising pre-existing knowledge and developing strategies to accomplish a task.

Resilience
An individual's ability to overcome difficulties, adapt to challenges and continue to progress despite obstacles.

Learning regulation
The ability to adjust learning strategies according to goals, progress and results.

Monitoring
Dimension of metacognition involving active monitoring of progress during learning, adjusting pace or strategies as needed.

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CogniQuest

CogniQuest is a project led by five European organisations aiming to support pupils in developing their metacognitive skills, learning-to-learn skills and lifelong learning competencies to adapt to the changing tendencies of the labour market.

Discover more ressources on metacognition on the website of the project:

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