



Meta-Skills for AE

Metacognitive Competence Framework

SUMMARY



Project ID: 2021-1-RO01-KA220-ADU-000028211



Co-funded by
the European Union

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The European Commission's support for the production of this publication does not constitute an endorsement of the contents, which reflect the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Executive summary

The *Metacognitive Competence Framework* defines the key components of competencies needed by adult learners to effectively integrate metacognition into their individual learning context, as well as to provide and validate an EU reference framework for developing and evaluating metacognitive competences. The framework is aimed at adult learners but will also be relevant and of interest to pre-service / in-service teachers and trainers and educators, as well as educational and lifelong learning policy makers, relating to the technological upskilling and capacity building of adult education.

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1. INTRODUCTION

1.1 RESEARCH BACKGROUND

The world is rapidly changing and success or, sometimes, survival depends on individuals' ability to act fast and adapt easily, to learn continuously, be it in school or on their own, to be resilient and autonomous and to manage diverse career paths. The European Commission has developed and published the *Key Competences for Lifelong Learning* that was drafted in 2018 and updated in 2019. The document highlights the importance of increasing the level of eight key competences in terms of *Knowledge, Skills and Attitudes*, among which we find *Learning to Learn* competence.

The same source shows that teaching and learning should adopt competence-oriented approaches which is opposed to knowledge-based training that predominates in most traditional current educations: "Competence oriented education, training and lifelong learning refers to a teaching and learning approach that aims at developing key competences including relevant knowledge, skills and attitudes."

At the same time, the *Key Competences for Lifelong Learning* acknowledges the fact that "our education and training systems do not deliver for everyone, and we risk leaving people behind" which is reflected by the early age and the number of school droppers. Within *Key Competences for Lifelong Learning*, 'Learning to Learn' is covered in 6% of the curriculum at Primary 1 and 2, less than 5% in Primary years 3 to 5, and not at all for secondary school education which implies that adult learners who left school early or fared poorly in school have very poor if not at all metacognitive skills.

The *Metacognitive Competence Framework (MCF)* aims at establishing the skills, attitudes, and behaviours that adult learners need to gain so that their learning become successful and that trainers need to deploy to improve their performance and results significantly.

The development of a metacognitive competency framework is an effective method to assess, maintain, and monitor learners' metacognitive knowledge, as well as their skills, attitudes, and progress towards them. Met-AE project aims to build on the framework provided in the *Key Competences for Lifelong Learning* (European Commission, 2018) which is largely aimed at the school education sector, therefore does not take into consideration the different needs and challenges of adult learners, nor does it explicitly cover the full range of metacognitive skills required by adult learners.

The *Metacognitive Competence Framework* refers to this existing competence framework, but it is specifically targeted towards the application and proactive awareness of these skills among

European adult learners. The *Metacognitive Competence Framework* facilitates and improves the recognition of metacognitive competence as a critical component of the lifelong learning able to ensure equal opportunities, access to the labour market, and inclusion. The present framework supports the development and understanding of metacognitive competences across Europe and inspires practice, regardless the field of study or training. Metacognitive skills are of outmost importance nowadays since they are able to empower adults to have a better life quality and more chances to become successful in their careers.

1.2 AIM & ADDRESSABILITY

The current framework defines the key components of competencies needed by adult learners to effectively integrate metacognition into their individual learning context, as well as to provide and validate an EU reference framework for developing and evaluating metacognitive competences. The framework is aimed at adult learners but will also be relevant and of interest to pre-service / in-service teachers and trainers and educators, as well as educational and lifelong learning policy makers, relating to the technological upskilling and capacity building of adult education.

The Met-AE *Metacognitive Competence Framework* is aimed at:

1. creating awareness and raise interest around a structured, flexible metacognitive approach as a potential solution to the difficulties faced by some learners during the digital transformation of adult education;
2. introducing a review of the initiatives and resources at national level in partners' countries (Romania, Estonia, Portugal, Poland, Greece, and Italy), as well as an outline of best practices in the same countries;
3. proposing definitions of the metacognitive knowledge, skills and attitude required to adopt a metacognitive in self-directed learning;
4. identifying specific metacognitive competencies, in the form of sets of self-reflective topics;
5. proposing progression levels that will implicitly identify relevant training paths for both adult learners and adult educators.

1.3 STRUCTURE

The Summary of the *Metacognitive Competence Framework* is structured as follows:

1. **Introduction** - presents the European context addressing competencies, the objectives, and the structure of available resources.
2. **Methodology and Descriptors** - outlines the strategy used to collect data that backgrounds the metacognitive competences, skills and attitudes included in the framework. The full version of the MCF provides a Map of Proficiency Levels showing competence areas and description of learning outcomes for relevant competences. It indicates proficiency levels

(Novice, Competent, Proficient) which creates a coherent metacognition skills pathway and guides the learners' and trainers' development over time.

3. **Benefits of Metacognitive Skills** – addresses both adult learners and trainers and offers recommendations aimed to guide and support trainers to become more effective in assisting their learners and to empower them to perform better in medium and long term.
4. **Review of European policies** - addresses the adoption and effectiveness of metacognition and wider adult self-directed learning strategies, and how these translate/filter down to learners and educators at national level context.
5. **Conclusions and Recommendations** – sums up the main information of the Framework and formulates suggestions for the assessment and improvement of metacognitive competences.

References

Annex 1 – Desk Research Reporting Template

More in-depth perspective on metacognition and on the specific skills that could improve the quality of life of vulnerable and NEET adult learners can be found in the full version of the *Metacognitive Competence Framework*. It can be used by adult trainers or adult learners to support their teaching or learning efforts and can be downloaded as OER from <https://metaskills.erasmus.site/>

2. METHODOLOGY AND DESCRIPTORS

2.1 METHODOLOGY

The need analysis carried out during the initial planning phases highlighted the fact that there is currently no single metacognitive competence framework specifically aimed at vulnerable and NEET adult learners that could be used by adult trainers or adult learners to support their teaching or learning efforts. Consequently, the partnership brought together principles of adult learning / teaching, information and research published on cognitive teaching and learning as well as a review of relevant resources available in Romania, Italy, Portugal, Poland, Greece, and Estonia.

Each country selected a national Reference Group of adult educations' experts (staff and centre managers) who contributed with best practices and provided feedback to a relevant questionnaire for the framework (see Annex 1). Furthermore, each partner identified, mapped, and analysed existing reference documents in their countries, which provided relevant input regarding the adoption and effectiveness of metacognition and wider adult self-directed learning strategies, and how these translate/filter down to learners and educators at the national level context in each of the project partner countries. This research activity also included interviews with key stakeholders, end users and policy maker experts, which was one of the key factors in gathering qualitative input to produce this framework.

The *Metacognitive Competence Framework* drew heavily from EU reference documents such as the *Key Competences for Lifelong Learning* and the *EntreComp* that were published by the European Commission. A third framework that was considered in the design of MCF is *LifeComp - The European Framework for Personal, Social and Learning to Learn Key Competence* (EU, 2020) that has 9 competences and 27 descriptors. The framework is conceptual and non-prescriptive.

The *Metacognitive Competence Framework* was tested by the members of the Reference Groups of experts from 6 European countries and improved based on their feedback. Next, the MCF was tested again together with the *Metacognitive Supporter e-Course* and the *Metacognitive Learner Interactive e-Course* to gather quantitative and qualitative feedback from both target groups using a combination of focus groups, in person and online questionnaires.

The framework is designed in an accessible way for the specific stakeholders to facilitate its use and integration which maximizes its exploitation, thus leading to longer term impact and contributing to its sustainability.

2.2 METACOGNITION: DEFINITION AND COMPONENTS

Metacognition is understood as the management of learning or thinking about thinking resulting in reflection and meaningful learning. Metacognition is the ability to reflect on the thought processes that allow us to interpret reality. It is also the ability to control, monitor, evaluate and regulate them to the extent that they interfere with cognition. What we understand today as metacognition has its origins in the ideas of John H. Flavell. Multiple theories have emerged that seek to explain the unfolding of these processes. To better understand this, we need to state two ideas that govern the process:

- Metacognitive knowledge: refers to what people know about their own cognitive processes. For example, their knowledge about their abilities to perform certain tasks. It also involves knowledge of strategies designed to improve those skills.
- Metacognitive regulation: involves the actions that people take with respect to these cognitive processes and strategies. It is related to monitoring and involves discriminating outcomes. For example, realizing that a particular strategy used to improve a skill (or weakness) is not effective.

Metacognition includes all processes that learners use when they plan, monitor, evaluate and make changes to their own learning behaviours. Research unanimously indicates that metacognition has two dimensions: the metacognitive knowledge that indicates what learners know about learning in terms of own cognitive abilities, particular tasks and knowledge of available and relevant strategies, and the metacognitive regulation which indicates what learners do about learning, in terms of monitoring and control of their own cognitive processes.

2.3 METACOGNITIVE COMPETENCE AREAS

To become better and more independent learners, adults need skills that can be grouped under three main competence areas which also indicate the progression towards reaching the desired level of metacognitive proficiency. Metacognitive strategies can be learned, practiced, and transformed into habits in order to improve learning, studying, and thinking skills.

Different theories have established different phases, but to achieve Metacognitive Competence Framework, we will consider **Planning, Monitoring & Evaluation**, and **Reflection** which we will define as key areas of metacognitive competence that combine to strengthen what experts call metacognition. Accordingly, we will refer to four types of learners: **Tacit, Aware, Strategic** and **Reflective**.

2.3.1 COMPREHENSION (PLANNING) AREA

Metacognition starts with questions that the adult learner has to address themselves about what they know, about what they want to know and about what they have learned, which is aimed at helping them to organize information before, during and after learning sessions. This will also help the adult learner to engage in new topics, activate their prior knowledge and monitor their learning. Learners need to think about what they already know that could help them respond to the learning objective.

2.3.2 MEMORY (MONITORING & EVALUATION) AREA

During this phase, learners implement their plan and monitor their progress towards reaching specific learning goals. Adults make connections between novel information and previous experience to build complex information. Furthermore, based on the results of their conscious efforts, learners might decide to make changes to the strategies they are using if these are not working. Finally, learners should evaluate the efficiency of their strategy and their results to see how they are progressing with their learning and assess what areas they need to focus on.

2.3.3 APPLICATION (REFLECTION) AREA

This phase empowers learners to evaluate their performance in relation to a specific task and think about what they might do differently to improve their performance in future tasks. Adult learners need skills for applying knowledge to real life situations and for reflecting on topics they are learning, on how effectively they discovered what they wanted to know, on the strategies they planned and used, on things that went bad, and on what should be changed.

2.4 METACOGNITIVE COMPETENCE DESCRIPTORS

The main areas of metacognitive competences have associated descriptors that are fundamental for the design of the present framework. Metacognitive competence descriptors are specific descriptions of the skills and abilities that individuals use to monitor, control, and reflect on their own learning and thinking processes. By developing these metacognitive competence descriptors, individuals can become more aware of their own learning and thinking processes and improve their ability to regulate and control them. Here are the metacognitive competence descriptors that have been showcased by the desk research carried out in six European countries.

2.4.1 COMPREHENSION (PLANNING) AREA

2.4.1.1 Planning: Setting goals, identifying tasks, creating timelines, and organizing resources to achieve a desired outcome. The adult learner must take breaks from a task to actively examine their

own behaviour as part of self-questioning, which should occur both during and after finishing the work.

2.4.1.2 Evaluation: Assessing the effectiveness and quality of one's own work and learning strategies and making judgments about the adequacy of one's performances is an important part of metacognition and self-regulated learning.

2.4.1.3 Reflection: Thinking critically about one's own learning and thinking processes, analysing one's strengths and weaknesses, and identifying areas for improvement. Reflection is the process of pausing to consider a task, thinking of improvements, trying the activity again, and then returning to reflection.

2.4.1.4 Regulation: Learning regulation refers to the process by which learners actively monitor, control, and regulate their own learning. It involves a range of cognitive, metacognitive, and motivational strategies that learners use to manage their own learning and improve their learning outcomes.

2.4.2 MEMORY (MONITORING & EVALUATION) AREA

2.4.2.1 Monitoring: Observing, checking, and evaluating one's own learning and thinking processes in real-time. Monitoring of autonomous learning involves tracking and evaluating one's own learning progress and performance to identify areas of strength and weakness, adjust learning strategies as needed, and ultimately achieve one's learning goals.

2.4.2.2 Awareness: Recognizing one's own cognitive and affective states and using this knowledge to guide learning and problem-solving. Understanding one's own strengths and flaws is essential to metacognition. It is also referred to as **Awareness of Strengths and Weaknesses** or **Self-control Skills** or **Awareness of Learning Styles**. Becoming aware of one's own learning preferences is a critical metacognitive ability. Adult learners need to develop understanding of how their brains absorb information and can use various strategies to improve their information retention, such as chunking, association, visualization, mnemonics, etc.

2.4.2.3 Cognitive Flexibility: Being able to adjust one's own thinking strategies and adapt to new or changing information. Adult learners must be able to create task-based or generic regulatory checklists that properly organize and arrange information. It is also referred to as **Information Organization**.

2.4.2.4 Self-motivation: Taking initiative to engage in learning, persisting through challenges, and staying motivated to achieve goals. It is also referred to as **Self-direction**. Compared to younger students, adults are significantly more motivated and self-directed, and they study because they want to or because it benefits them.

2.4.3 APPLICATION (REFLECTION) AREA

2.4.3.1 Transfer: Applying knowledge and skills learned in one context to new situations or problems. The transfer of knowledge is important for learning because it allows learners to apply what they have learned in new situations and contexts. This means that they are better able to see the relevance and applicability of what they have learned, which increases their motivation and engagement in the learning process.

2.4.3.2 Strategic Thinking: Analysing and identifying the problem, selecting a strategy to solve the problem, and evaluating the success of the strategy. Strategic thinking is a cognitive skill that involves analysing complex problems, identifying potential solutions, and selecting the most effective course of action to achieve a specific goal or outcome. It involves thinking critically and creatively to develop a plan of action that maximizes the chances of success.

2.4.3.3 Agency: Human agency is the capacity to influence one's life, and there are several ways to categorize it. Individual decision and the power to affect one's circumstances and opportunities in life are examples of individual agency. The ability to exert control over one's ideas, attitudes, and behaviours is known as human agency. Human agency requires task management, problem solving, decision making.

2.4.3.4 Adaptability & Communication

Adaptability is the ability to adjust to new situations, learn from new experiences, and respond effectively to changes. Adaptability enables adults to identify and respond to their changing learning needs, to find creative solutions and new ways of learning and to learn new technologies and adapt to new ways of learning more easily, allowing them to keep up with the changing demands of the workplace and society.

Communication facilitates the exchange of information, ideas, and feedback with others, provides opportunities for individuals to gain new insights and perspectives and helps adults to identify and clarify their learning needs and goals. It can provide a sense of support and accountability.

MAP OF METACOGNITIVE PROFICIENCY LEVELS

Metacognitive Proficiency Map provides a framework describing the different stages of metacognitive development that individuals may progress through as they learn to monitor, control, and reflect on their own thinking and learning processes. Here are some examples of metacognitive proficiency levels:

- **Novice:** Individuals at this level have limited awareness of their own thinking and learning processes and need external guidance or structure to complete tasks. They begin to develop some awareness of their own thinking and learning processes and can make basic decisions about how to approach a task or solve a problem.

- **Competent:** Individuals at this level have a solid understanding of their own thinking and learning processes and can use this knowledge to plan, monitor, and evaluate their own performance. They are able to apply metacognitive strategies in a variety of contexts, adjust their own learning processes as needed, and use metacognition to enhance their overall performance.
- **Proficient:** Individuals at this level have a high level of metacognitive proficiency and are able to use metacognitive strategies automatically and flexibly, adapt to new or changing situations, and consistently achieve high levels of performance.

It is important to note that metacognitive proficiency levels are not fixed or static and can change over time as individuals gain more experience and practice with metacognitive strategies. Additionally, individuals may demonstrate different levels of metacognitive proficiency in different areas of their lives or in different contexts. Each area of metacognitive competences is described in terms of:

- **Knowledge or Declarative knowledge** or basic general knowledge is a type of knowledge that involves the knowledge of facts, concepts, and propositions. It refers to knowledge that can be explicitly stated. Declarative knowledge is often contrasted with procedural knowledge, which refers to knowledge of how to do something, such as riding a bicycle or solving a math problem. Declarative knowledge is also different from knowledge of skills, which refers to the ability to perform a task or execute a specific set of actions.
- **Skills or Procedural knowledge** are the basic skills needed to perform simple tasks or study under direct supervision in a structured context. Procedural knowledge involves knowing how to do something. It is the knowledge of a sequence of actions, procedures, or skills that are required to perform a particular task. Procedural knowledge is focused on knowing how to do something, often through practice and repetition. It is often acquired through experience and learning by doing, rather than through reading or studying.
- **Attitudes / Abilities or Conditional knowledge** is a type of knowledge that involves knowing when and where to use certain skills or strategies. It is the ability to apply procedural or declarative knowledge in specific contexts, considering the conditions or circumstances in which the knowledge is applied. Conditional knowledge is often based on experience and involves understanding the contingencies and relationships between different aspects of a situation or problem. It requires a deep understanding of the underlying principles and concepts that govern a particular domain, as well as the ability to adapt to changing conditions and contexts.

3. BENEFITS OF METACOGNITIVE SKILLS

3.1 ADULT LEARNERS

Metacognitive learning has major positive effects on the quality of the adults' life, by enhancing the quality of lifelong learning. It improves learners' comprehension of acquiring new information, consequently they can develop a deeper understanding of new learning materials. Adults can build upon previous ideas and apply new concepts to already existing knowledge.

Metacognitive skills allow adults to develop problem-solving skills they can apply under challenging tasks and become more confident.

Metacognitive skills contribute to the formation of different concepts (abstract thinking) such as easily perceiving and interpreting information that could boost creativity and lead to innovation.

Skilled metacognitive adults learn new things faster. Through the experience of learning, the adult will be able to recycle and use the same learning methods that worked previously.

Improved metacognitive skills have significant benefits for adult learners, including:

Improved Learning Outcomes: By reflecting on their own learning strategies and monitoring their progress, adult learners can identify areas for improvement and make adjustments that can lead to better learning outcomes.

Increased Self-Awareness: Adult learners become more self-aware which leads to greater self-confidence, improved decision-making, and a greater sense of control over one's own life.

Enhanced Problem-Solving: By reflecting on their own thinking processes, learners can identify the strategies they use most effectively and apply them to new challenges.

Improved Decision-Making: Metacognition can also help adult learners make better decisions by encouraging them to think critically and reflect on the consequences of their choices.

Increased Motivation: By setting goals, monitoring progress, and reflecting on successes and failures, learners can gain a greater sense of accomplishment and motivation to continue learning.

3.2 ADULT EDUCATORS

Adult educators should be aware that unlike child learning, which is directed toward generic, lifetime information, adult learning concentrates on knowledge that is immediately applicable and builds on prior experiences.

In order to improve their own instruction and the learning outcomes of their students, adult educators can benefit from using metacognitive skills in a number of ways:

Improved Self-Regulation: By understanding their own strengths and weaknesses, adult educators can tailor their instructional approaches to better meet the needs of their students.

Enhanced Learning Outcomes: By teaching students to be more aware of their own learning processes, educators can help them develop more effective strategies for acquiring and retaining new knowledge.

More Effective Problem-Solving: By analysing their own thinking processes, educators can identify the strategies they use most effectively and apply them to new challenges.

Improved Student Engagement: By teaching students to think about their own learning, educators can help them develop a sense of ownership over their education, which can lead to greater motivation and persistence.

Adult educators need to consider the following principles when building curriculum and expectations for adult learners:

Adults are self-directing: Self-directed learning comes effortlessly to adult learners who are more likely to organize, carry out, and assess their educational experiences on their own. Adult learners develop goals, identify their training or educational needs, and put a strategy in place to improve their own learning when undergoing instruction.

Adults learn by doing: Adults prefer to actively engage in actions connected to their learning rather than just reading or hearing about topics. Real-world examples and project-based learning work very well with them since this type of learning looks valuable for them and gives them a clear understanding of what they can accomplish with their knowledge.

Adults desire relevance: Adult learners are more prone to participate in learning that directly impacts their life. Any training should meet some of their real needs and look significant.

Adults utilize experience: The most efficient learning occurs when adults make meaning of the events that shaped them, therefore hands-on training could be helpful for adult learners. They have a stronger understanding of what they are learning and become more enthusiastic about how it might be applied to their interests and professions by participating in relevant activities.

Adults process with their senses: Adult learners do not feel at ease in a lecture-style setting. It is critical to completely engage their senses during learning since older learners' brains are less malleable. Learning activities must involve individual, group, visual components, reading/writing, kinesthetic, visual, auditory.

Adults appreciate repetition: Adult learners need repetition to learn. Self-efficacy will increase if they can practice new abilities in a safe setting before applying them in the real world. Their chances of mastering a topic or talent increase with the amount of practice they can get.

Adults guide their own development: Adult learners may assess their fundamental ideas and assumptions through critical thinking and questioning, and they can also learn from what they discover about themselves in the process.

Adults succeed with goal setting: Learning will go more effortlessly for individuals who have a personal goal in mind. Adult learners require objectives because they have greater control over their education than younger peers.

Adults learn differently than children: To create meaningful learning for grown-ups can be achieved through various approaches. Adult learners make use of their past experiences in life and their information of a subject. Adult instruction must be problem-centred to have a more noteworthy impact on real-world circumstances or current occasions.

Adults require ownership: Grown-up learners put more importance on natural inspiration and individual possession of their learning, with a more complex order of demands. By praising their achievements and empowering higher self-esteem and confidence, they will be become more motivated.

4. REVIEW OF EUROPEAN POLICIES

The Review of European policies section is aimed to address the adoption and effectiveness of metacognition and wider adult self-directed learning strategies, and how these translate/filter down to learners and educators at the national level context in each of the project partner countries. The consortium members from Romania, Greece, Poland, Italy, Portugal and Estonia undertook a comprehensive review of literature, reports and national educational guidance and curricula documentation for each of the partner countries, to understand the extent and relevance of metacognitive competences, how they are referenced and implemented within national contexts. This research activity also included interviews with key stakeholders, end users and policy maker experts during meetings that were held at the beginning of the project. To conduct the desk research, the following categories of resources have been considered:

- | | |
|--|--|
| <input type="checkbox"/> Academic study / report / paper | <input type="checkbox"/> <i>Learning to learn</i> training |
| <input type="checkbox"/> Metacognition related study programme (HEI) | <input type="checkbox"/> Scientific publication |
| <input type="checkbox"/> Tool to identify/validate learning skills | <input type="checkbox"/> Cognitive / Metacognitive training tool |
| <input type="checkbox"/> Competence framework | <input type="checkbox"/> Other (please briefly describe) |

More than 20 resources have been considered for this purpose, out of which 15 academic studies/reports and papers, which indicates that even though metacognition receives deserved attention, practical tools and initiatives addressing it are still scarce and do not provide consistent support neither for educations, nor for adult learners. The analysis of the input from six European countries showed poor awareness of metacognition in most countries. Furthermore, most resources tackle metacognition for schoolteachers or learners, while the adult trainers or learners are still poorly addressed.

The pool of resources that partners identified regarding the adoption and effectiveness of metacognition and adult self-directed learning strategies have played important role in the shaping the theoretical part of the *Metacognitive Competence Framework*, providing solid indications that address especially the following:

- Identification of adult learners' training needs and challenges and of good practices of *Learning to Learn* training for adults
- Provision of input on metacognitive knowledge, skills, and attitudes
- Provision of support to adult trainers, of metacognitive competence-oriented approach and of content and instructional design for adult training

- Provision of guidance regarding the curricular design for adult learners and of updates on tools / techniques to monitor and assess adult learners' Learning to learn knowledge, skills, and attitudes.

The desk research brought in a deeper and more relevant understanding of the approaches to metacognition and the training available in various contexts, especially in pre-university and tertiary educations. The investigations revealed the extent to which metacognitive competences receive the due attention in six European countries in terms of the self-awareness of their benefits for the learner's learning path and of the development of the needed competences.

It is to be mentioned that resources addressing

- Needs and challenges of vulnerable and NEET adult learners
- Competence frameworks relevant to metacognitive competency framework
- Quality elements of adult training
- Technical requirements for adult teaching and learning environments

are few or missing, which further supporting the theoretical design the *Metacognitive Competence Framework*, by providing a basis of knowledge and comprehension to the relation between the cognitive training approach, the development of autonomy and self-awareness and their benefits to learning paths.

5.CONCLUSIONS AND RECOMMENDATIONS

Metacognition is more complex than thinking about one's thinking. In fact, actively monitoring one's own learning and making changes to one's own learning behaviours and strategies based on this monitoring are far more important in metacognition.

Trainers are the first to set out the culture of learning by creating a supportive learning environment that promotes metacognitive practices that will become an essential part of the learning process. The development of the learners' metacognitive skills does not exclude the contribution of the trainer, even if it focuses on allowing the learner to take control of their own learning. The trainer's role is to monitor metacognitive strategies, approve or intervene and encourage the learner.

Regardless of the status, both learners and trainers should check the inclusion of clear learning objectives to enable their planning and achievement through the identification of strategies they already know that could be applied in this new situation. Effective learners commonly use metacognitive strategies whenever they learn. However, they may fail to recognize which strategy is the most effective for a particular learning situation.

To increase awareness of the importance and role of metacognitive competences, as well as to train and refine relevant metacognitive skills, Met-AE partnership developed the following 14 training modules for adult learners and 7 training modules for adult trainers.

METACOGNITION TRAINING MODULES FOR LEARNERS

Intro: How to maximise this e-Course (by Cuiablue)

1. Identifying your own capacities (by CESIE)
2. Finding and maintaining your focus (by E&D)
3. Motivating yourself to learn digitally (by DANMAR)
4. Dealing with complex issues on your own (by Cuiablue)
5. Learning and working autonomously (by E&D)
6. Self-assessment tools and techniques (by CESIE)
7. Managing your learning (by USV)
8. Engineering your reverse career path (by Cuiablue)
9. Mental wellbeing during digital learning (by DANMAR)
10. Seeking intervention and support (by KEA)
11. Communicating constructively and collaborate (by ADES)
12. Building your self-tolerance and create confidence (by ADES)
13. Transitioning from the classroom to self-directed learning (by KEA)
14. Finding new learning opportunities (by USV)

METACOGNITION TRAINING MODULES FOR EDUCATORS AND TRAINERS

1. What is Metacognition? (Fundamentals and Context of Metacognition) (by CESIE)
2. Benefits of Metacognition (by USV)
3. Metacognitive Knowledge (by DANMAR)

4. Metacognitive Regulation (by Cuiablue)
5. Metacognitive Phases: Planning, Monitoring, Evaluation and Reflection (by KEA)
6. Types of Learners: Tacit, Aware, Strategic and Reflective Learners (by ADES)
7. Limitations and Appropriateness of Metacognition (by E&D)

The topics of the modules have been carefully selected to cover the full range of skills following the progression through the competence levels, as shown in the present metacognitive competence framework. The training modules are aimed to support learners to adopt reflective and metacognitive approach to their learning and trainers to perform better and be able to provide more efficient assistance and support to their learners. The modules for learners ensure smooth but effective growth of learning processes, leading to improved progress monitoring and evaluation of existing skills and opportunities for improvement, where needed.

METACOGNITION TRAINING MODULES

1. Identifying your own capacities
2. Finding and maintaining your focus
3. Motivating yourself to learn digitally
4. Dealing with complex issues on your own
5. Learning and working autonomously
6. Self-assessment tools and techniques
7. Managing your learning
8. Engineering your reverse career path
9. Mental wellbeing during digital learning
10. Seeking intervention and support
11. Communicating constructively and collaboratively
12. Building your self-tolerance and create confidence
13. Transitioning from the classroom to self-directed learning
14. Finding new learning opportunities

METACOGNITIVE COMPETENCES

- Planning + Reflection
- Evaluation + Strategic thinking
- Cognitive flexibility + Self-motivation
- Cognitive flexibility + Agency
- Regulation + Self-motivation
- Evaluation + Awareness
- Reflection + Monitoring
- Transfer + Strategic thinking
- Awareness + Adaptability
- Monitoring + Direction
- Cognitive flexibility + Communication
- Regulation + Awareness
- Planning + Adaptability
- Transfer + Agency

The topics selected for the modules for trainers improve their mentoring and guidance skills in educators as a service to ensure that adult learners have relevant learning capacity throughout life with their metacognitive skills.

Each of the 14 metacognition training modules for learners is aimed to provide training of a combination of two relevant skills that are needed by adult learners in order to make progress and become more metacognitive proficient. The metacognitive competence framework allows adult learners to self-check their status and address specifically the skills they need.

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https://educationendowmentfoundation.org.uk/uploads/pdf/Metacognition_and_self-regulation_Technical_Appendix.pdf
- OECD Insights: Debate the issues. *Focus on metacognition*

<http://oecdinsights.org/2014/10/28/want-to-improve-your-problem-solving-skills-try-metacognition/>.

Websites

- Examples of both cognitive and metacognitive questions that can be used in the classroom
<http://journal.media-culture.org.au/0605/11-leslie.php>
- Education Endowment Foundation: Teaching and Learning Toolkit on metacognition
<https://educationendowmentfoundation.org.uk/evidence/teaching-learning-toolkit/meta-cognitionand-self-regulation>
- Thinking Together Project. A dialogue-based approach to the development of children’s thinking and learning. <http://thinkingtogether.educ.cam.ac.uk>
- Cambridge International Examinations education blog. An entry introducing the Biggs and Collis taxonomy for the Structure of Observed Learning Outcome (SOLO):
<http://blog.cie.org.uk/learning-to-learn-a-solo-perspective/>

ANNEX 1

DESK RESEARCH REPORTING TEMPLATE

PR2: Metacognitive Competence Framework

A1: Review of European policies in relation to the adoption and effectiveness of metacognition and wider adult self-directed learning strategies

PARTNER:

INFORMATION ON MATERIAL, ITEM, SOURCE FOUND

1. Name / Title / of resource/material/item (in original language):

2. Original language of resource/material/item:

English

Portuguese

Italian

Polish

Romanian

Greek

Estonian

3. Brief translation of title in English (if not an English original):

4. Type of resource/material/item:

Academic study / report / paper

Learning to learn training module

Metacognition related study programme (HEI)

Scientific publication

Tool to identify/validate learning skills

Cognitive / Metacognitive training tool

Competence framework

Other (please briefly describe):

5. Format of resource/material/item:

Paper/Print

Book

Magazine article / journal article

Audio (Podcast)

Video

Online (Digital)

Other:

6. For online formats, please provide links:

7. For paper, book, journal, magazine, please provide ISBN or bibliographical details (if available):

8. Please provide a **brief** English summary of the resource/material/item and its context. Who is it aimed at?

9. How does this resource /material /item fit with the objectives of the Met-AE project?

10. What elements / parts, if any, could be exploited to design the Metacognitive Competence Framework?

11. For which elements of the Metacognitive Competence Framework is the resource /material /item most useful:

Identify adult trainers' training needs and challenges

Identify adult learners' training needs and challenges

Curricular design for adult learners

Good practices of *Learning to learn* training for adults

- Content and instructional design for adult training
- Input on metacognitive knowledge, skills, and attitudes
- Metacognitive competence-oriented approach
- Tools / techniques to monitor and assess adult learners' *Learning to learn* knowledge, skills, and attitudes
- Quality elements of adult training
- Needs and challenges of vulnerable and NEET adult learners
- Support to adult trainers
- Technical requirements for adult teaching and learning environments
- Competence frameworks relevant to metacognitive competency framework

12. If possible, please attach a copy of the resource/material/item found (if not indicated above with a URL link or ISBN reference.)



Meta-Skills for AE



Universitatea
Ștefan cel Mare
Suceava



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Co-funded by
the European Union