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Meta-Skills
for AE

MAP OF METACOGNITIVE PROFICIENCY LEVELS

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MAP OF METACOGNITIVE PROFICIENCY LEVELS

The *Map of Metacognitive Proficiency Levels* provides a framework for 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. The key is to recognize the importance of metacognition and to actively work to develop and improve metacognitive skills in order to enhance one's overall learning and performance.



In the *Metacognitive Competence Framework*, each area of metacognitive competences is described in terms of:

- **Knowledge or Declarative knowledge** or Basic general knowledge 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. Declarative knowledge is important in many areas, such as education, where students are expected to learn and remember facts and concepts. It is also important in fields like science, where researchers need to have a deep understanding of facts and concepts in order to make meaningful discoveries and advances.
- **Skills or Procedural knowledge** which are the basic skills needed to perform simple tasks or study under direct supervision in a structured context. Procedural knowledge is a type of knowledge that involves knowing how to do something, such as riding a bicycle, playing a musical instrument, or solving a math problem. It is the knowledge of a sequence of actions, procedures, or skills that are required to perform a particular task. Unlike declarative knowledge, which involves knowing what something is or what it means, 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. Procedural knowledge is important in many professional areas, such as engineering, sports, and medicine, where engineers, athletes, and doctors must develop skills and techniques in order to be successful and must have the ability to design and build complex systems.
- **Attitudes / Abilities or Conditional knowledge** involves knowing when and where to use certain skills or strategies. It is the ability to apply procedural or declarative knowledge in specific contexts, taking into account the conditions or circumstances in which the knowledge is to be 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. For example, a learner may have procedural knowledge of how to solve a certain math formula or a chemistry reaction, but they also need to have conditional knowledge of when and where to apply that formula based on the specific context they deal with in real life to solve a particular problem. Conditional knowledge requires a deep understanding of both procedural and declarative knowledge, as well as the ability to apply that knowledge in specific contexts.



Metacognitive Competence Area: PLANNING (COMPREHENSION)

PLANNING			
LEVEL \ DESCRIPTORS	Novice	Competent	Proficient
Knowledge	Knowledge about factors that can influence own performance such as goals, priorities and schedule and outcomes.	Knowing when and why to use planning principles and strategies through practice and repetition.	Knowledge about the allocation of their resources when using strategies, which this will become more effective.
Skills	Setting clear, specific goals that should be achievable, measurable, and relevant to your overall learning objectives.	Prioritize goals based on their importance and the amount of time and resources they require.	Monitor own progress and make necessary adjustments to own plan as needed.
Attitudes / Abilities	Create a schedule or timeline for completing each task or activity.	Allocate time and energy effectively. Stay motivated and focused on your goals.	Stay on track and make progress towards your goals. Identify areas for improvement to continue to develop self-directed learning skills.



EVALUATION			
LEVEL \ DESCRIPTORS	Novice	Competent	Proficient
Knowledge	Knowledge about the role of evaluation in the learning process and assessment methods.	Knowledge about the process of assessing and measuring learning outcomes and progress.	Know how to determine their strengths and weaknesses and to identify areas for improvement.
Skills	Set clear and specific learning objectives that can be evaluated.	Identify the assessment methods that are most appropriate for own learning objectives and adjust them as needed.	Analyse evaluation results and use them to identify areas of weakness, adjust learning strategies, and set new learning objectives
Attitudes / Abilities	Ensure that the evaluation process is meaningful and relevant to the learning goals.	Seek feedback regularly such as peers, mentors, or self-reflection to identify areas of improvement and make necessary adjustments to their learning approach.	Use evaluation results to guide future learning.



REFLECTION			
LEVEL \ DESCRIPTORS	Novice	Competent	Proficient
Knowledge	Knowledge about forms of reflection as an ongoing process.	Knowledge about different reflection techniques	Knowledge about critical thinking.
Skills	Regularly practice reflection and experiment with different reflection techniques.	Make sense of their learning experiences. Analyse and evaluate information in a systematic and logical way.	Connect new information to their existing knowledge and experiences. Apply their learning experiences in new learning situations.
Attitudes / Abilities	Look back on what has been learned, how it was learned. Find what works best for them.	Become more self-aware of their own strengths, weaknesses, and learning preferences. Become more motivated.	Gain deeper insights and make more informed decisions. Better understand complex concepts and develop a more meaningful understanding.



REGULATION			
LEVEL \ DESCRIPTORS	Novice	Competent	Proficient
Knowledge	Knowledge about different goal setting strategies.	Knowledge about reflection models.	Knowledge about thought processes and their management.
Skills	Setting clear, specific goals that are challenging but achievable.	Monitor their own progress and evaluate their own learning outcomes towards their goals, using strategies such as self-reflection, self-assessment, and self-evaluation	Manage their time effectively, setting priorities and allocating time to different learning activities based on their importance and urgency.
Attitudes / Abilities	Align set goals with their overall learning objectives.	Identify areas where they need to improve and adjust their learning strategies accordingly.	Take control of their own learning process, set and achieve goals, and make continuous improvements to their knowledge and skills.



Metacognitive Competence Area: MEMORY (MONITORING & EVALUATION) AREA

MONITORING			
LEVEL \ DESCRIPTORS	Novice	Competent	Proficient
Knowledge	Knowledge about tracking progress tools.	Knowledge about effectiveness of learning strategies.	Knowledge about improvement of learning strategies
Skills	Regularly track and record progress towards the learning goals.	Evaluate the effectiveness of the learning strategies being used and adjust as necessary.	Stay motivated by celebrating progress and achievements, and by reminding oneself of the benefits of learning.
Attitudes / Abilities	Able to keep a learning log or use tracking tools.	Able to easier monitor progress and determine whether the goals are being met.	Take control of their own learning process and adjust as needed to achieve their goals



AWARENESS			
LEVEL \ DESCRIPTORS	Novice	Competent	Proficient
Knowledge	Knowledge about learning needs and SWOT.	Knowledge about memory and strategies to improve it.	Knowledge about cognitive and affective states.
Skills	Being aware of own learning needs.	Identify learning areas where improvement is needed	Focus efforts on acquiring new knowledge and skills.
Attitudes / Abilities	Become aware of one's own learning preferences and create appropriate learning plan..	Ability to identify their strengths as learner and their learning shortcomings.	Ability to create an effective learning plan and adjust it. Develop understanding of how their brains absorb information.



COGNITIVE FLEXIBILITY			
LEVEL \ DESCRIPTORS	Novice	Competent	Proficient
Knowledge	Knowledge about sources of information and about information formats and styles	Knowledge about problem solving strategies.	Knowledge about creative thinking strategies.
Skills	Seek out relevant information.	Develop new strategies to overcome obstacles. Be responsible for their own learning.	Managing competing priorities. Be able to adapt to changing circumstances and new challenges.
Attitudes / Abilities	Ability to understand and process information presented in different formats and styles.	Ability to solve problems effectively.	Ability to consider multiple perspectives. Ability to think creatively.



SELF-MOTIVATION			
LEVEL \ DESCRIPTORS	Novice	Competent	Proficient
Knowledge	<p>Knowledge about motivation and meaningfulness.</p> <p>Knowledge about own interest and passions.</p>	<p>Knowledge about self-rewarding strategies and methods to cope with failures.</p>	<p>Knowledge about strategies for increasing self-motivation.</p>
Skills	<p>Set measurable, achievable, relevant, and time-bound goals.</p> <p>Find meaning in own activities.</p>	<p>Be accountable for their own failures and learn from them.</p> <p>Reward oneself for achieving goals.</p>	<p>Cultivate a positive attitude towards challenges and possibilities.</p> <p>Overcome obstacles and fears.</p>
Attitudes / Abilities	<p>Explore topics or activities that spark own interests and passions.</p>	<p>Track progress towards own goals to find inspiration and extra motivation.</p>	<p>Believe in oneself and own ability to face challenges and strengthen self-motivation.</p>



Metacognitive Competence Area: APPLICATION (REFLECTION) AREA

TRANSFER			
LEVEL \ DESCRIPTORS	Novice	Competent	Proficient
Knowledge	Knowledge about key concepts of transfer of knowledge.	Knowledge about key concepts of transfer of skills.	Knowledge about effective lifelong learning.
Skills	Apply the knowledge they have learned in one context to new and different contexts. Learn and seek out knowledge independently.	Apply the skills they have learned in one context to new and different contexts in personal and professional lives.	Take what has been learned in one situation and apply it to another.
Attitudes / Abilities	Ability to make decisions	Ability to solve problems.	Ability to adapt to new situations more easily.



STRATEGIC THINKING			
LEVEL \ DESCRIPTORS	Novice	Competent	Proficient
Knowledge	Knowledge about identifying learning priorities.	Knowledge about making informed decisions strategies.	Knowledge about learning plan achievement strategies.
Skills	Identify own priorities and steps required to reach their goals. Plan their learning activities accordingly.	Make strategic decisions about what to learn, how to learn, and when to learn to align with their goals and priorities. Stay adaptable and flexible in the face of unexpected situations.	Develop a plan to achieve learning goals. Reflect on their progress and optimize their learning to achieve their goals more efficiently.
Attitudes / Abilities	Ability to break down the larger goals into smaller, manageable steps.	Ability to focus on the most critical areas and avoid distractions. Being open to new opportunities.	Ability to draw a clear learning roadmap in place and make progress towards their goals. Ability to overcome obstacles and continue to grow and develop.



AGENCY			
LEVEL \ DESCRIPTORS	Novice	Competent	Proficient
Knowledge	Knowledge about control strategies over one's ideas.	Knowledge about control strategies over one's attitudes.	Knowledge about control strategies over one's behaviours.
Skills	Decision making about what is important and relevant to learn. Tailor own learning to specific needs and interests.	Take active control and responsibility of own learning. Persist in own learning and develop a sense of self-efficacy.	Actively seek out resources and opportunities to learn.
Attitudes / Abilities	Ability to make choices about what, how, and when they want to learn. Feel empowered.	Have a sense of control over own learning process. Have motivation and confidence to take action towards own learning goals.	Have autonomy to set one's own learning goals and to decide how to achieve them in a way that is personally meaningful and relevant.



ADAPTABILITY & COMMUNICATION			
LEVEL \ DESCRIPTORS	Novice	Competent	Proficient
Knowledge	Knowledge about communication strategies.	Knowledge about adaptability strategies.	Knowledge about resilience strategies.
Skills	Practice effective communication and learn from others.	Be open to change and adjust to new circumstances, such as changes in technology or new methods of learning.	Build positive relationships with mentors, peers, and other professionals in their field.
Attitudes / Abilities	Ability to ask questions, seek feedback, and collaborate with others to achieve their goals.	Ability to adapt to changes and embrace new opportunities for growth and development.	Ability to adapt to changing circumstances, communicate effectively, and work collaboratively with others.



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