Utrecht University

Self-regulated learning

How to self-study better

Resource modules for MSc students in Earth Sciences
Departments of Earth Science and Physical Geography
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1 Introduction

1.1 Why this resource module?

Continuing to climb the educational ladder doesn't necessarily mean we were taught how to study effectively along the way. Most of us learned to study through a trial and error of different techniques. Once established, it's difficult to shake these habits even when they lead to negative outcomes such as time mismanagement or increased stress. Learning to become a self-regulated learner helps us gain control over these habits and steers us towards our most efficient selves.

The following module is a compilation of resources and techniques designed to help you implement self-regulated learning into your study. This wasn't created as a standalone document but should be used during your study sessions to help guide your knowledge retention. You may find yourself asking: how do I set up healthy academic goals for myself? Which study methods are best for my final exams next week? What should I do to track my progress? When such study related thoughts come to mind check this module for advice and guidance. Keep in mind: developing these habits takes time and you won't be able to apply each of these techniques right away.

We suggest scanning over the learning outcomes presented at the beginning of each chapter before starting. They provide a succinct explanation of what you can expect to learn from each chapter. You may find there are certain learning outcomes you would like to achieve more than others. Feel free to approach this module in the order that most aligns with your skill gaps or needs. The learning process is iterative and all these techniques eventually feed back into each other. As your critical thinking muscles are strengthened, so will your confidence to effectively manage your study on your own.

1.2 What is SRL?

Not all study methods were created equal, and they depend heavily on the individuals employing them. Learning how to direct time and energy towards the most productive study method leads to a more rewarding study experience and is proven to increase self-efficacy and motivation[1]. The cycle of self-regulated learning is illustrated in Fig. 1.

As a self-regulated learner, we start in the forethought phase: planning, setting goals, and laying out strategies for the task we'd like to do or learning outcome we'd like to achieve. During the performance phase we use strategies to monitor our performance. In the final stage, self-reflection, we not only reflect on our performance but use the results of this most recent performance to guide how we will handle the next one. The process is not one-size-

fits all, but over time it will become tailored to each individual's needs and learning expectations.

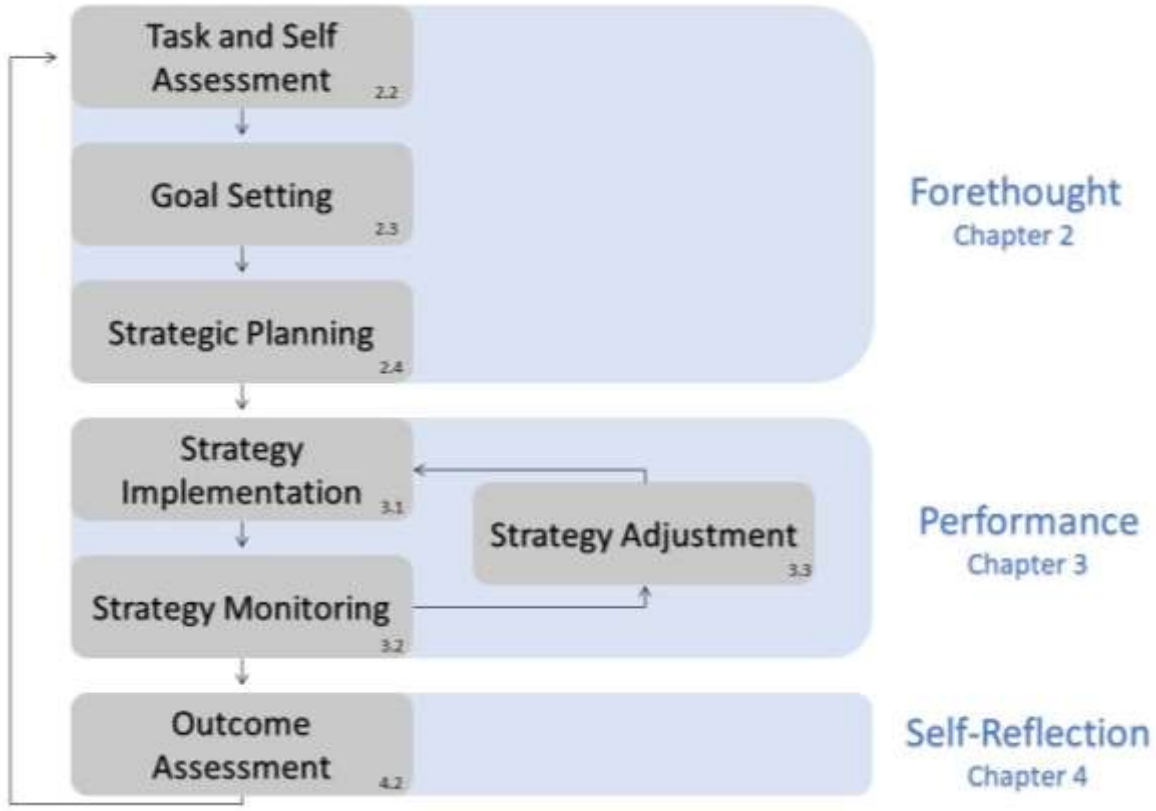


Fig. 1: The self-regulated learning cycle and associated chapters in this module.

2 Forethought: Before you start studying

Learning outcomes

At the end of this chapter you will be able to:

- Presented with a learning task, analyse and clearly understand the learning task and its cognitive and behavioural requirements
- Choose which learning strategies are effective in achieving learning task
- Formulate your own (SMART) study goals based on learning task and chosen learning strategies
- Make a study plan based on defined SMART study goals

2.1 Learning strategies

Have you ever critically thought about how you study? While you probably have a lot of practice with studying over the course of your undergraduate and graduate programs, effective studying isn't a subject that's explicitly taught. So that you can make a more informed decision about which strategy or combination of strategies you to use to reach your learning goals, the table below provides an overview of effective and ineffective study strategies.

Strategy	**Effective?**	**Time-intensive?**
Summarising – Identify the main point and exclude irrelevant content. Often students copy-paste the most important concepts from a text into a document. While this might be appealing, this is a **passive** study method and has little effect on your learning performance. Summarizing is most effective when done **actively**: - Read-recite-review method: recall what you remember from a chapter or tutorial, then check your notes/literature and update your summary based on the concepts you found difficulty with. As you repeat this process, you'll develop a clearer understanding of the material. - The Cornell method[2]: Leave some space on the right or left side of your summary and write down practice questions and key words for each section/paragraph. When finished, don't reread your summary but focus on answering the questions and explaining key words instead. This contextualise the material and helps to identify what needs to be studied further. -	Yes, but only when done actively	Yes, but saves time when reviewing topics from your notes
Practice testing – Test yourself with questions. You can do this by: - Using flashcards (psychical or digital) - Answering sample questions after the end of reading a textbook chapter - Finding practice exams - Making your own questions and sharing them with peers - Writing your current complete understanding of a topic on a blank page and checking afterwards if there were concepts you missed - Drawing a picture or process of something you are	Yes, highly effective	Yes, but worth it

learning and trying to explain it on your own - Use the summarising strategies as a practice test (see Summarising). -		
Distributed practice – Have multiple shorter study sessions. For example, study for six hours over the course of two weeks instead of all six hours in one day. While this might feel difficult, forgetting and then retrieving information strengthens your memory and is what makes this strategy so effective. Set aside at least 15 minutes of each study session to review your previous session.	Yes, highly effective	No, the time invested is spread out
Elaboration – Link new information to what you already know. When reading, you can do this by asking yourself questions such as 'Why?', 'Does this make sense?', 'Is this really true?' and 'How does this relate to other concepts I've previously learned?'	Moderately, depends on prior knowledge	No, takes little extra time if you already planned on reading the text
Interleaved practice – Alternate similar topics in one study session. Take for example four different types of math problems. Instead of practicing one type of problem for your whole study session, you could intermix the four types. For this strategy it's important that you do take enough time to understand one topic before moving on to the next. If you are restudying material, try to do it in a different order to see the differences and similarities.	Moderately, mostly when topics are similar	No, takes little extra time in your study session
Visualisation – Visualise what you are learning by creating an image. If your sole purpose is to remember your created image by heart, this technique is not very effective. A better way to use visualization is to structure knowledge by: - Drawing a process - Making a mind map or infographic on similar or contrasting ideas - Creating diagrams or graphs - Making a timeline - Or even drawing a cartoon You can combine visualization with other strategies like 'Practice testing' and/or 'Elaboration' to make the technique more effective. This is called 'dual-coding': when studying a	Only when combined with 'Practice testing' or 'Retrieval'	Yes

visual, try to explain (elaborate) it in your words; when reading a text, draw a visual from memory (retrieval).		
Highlighting – Reading a text and marking (by colouring or underlining) the things you think are important. While this technique is widely used, it does not improve learning performance. Underlining has shown to be ineffective regardless of topic and text length. Highlighting might be useful when you first start studying a text/topic, but only if you combine it with other study strategies such as turning highlighted concepts into flashcards or self-tests.	Not really	No, simple and quick
Rereading – Studying a text by reading it again. This strategy is not very useful if your goal is long-term understanding. It gives many students a false sense of confidence: by rereading a text many times, it will feel more familiar, like you know it well. But students are barely able to explain the text a couple days later. Rereading can become more effective for long-term learning when you combine it with 'Elaboration'.	Not really	No, simple and quick

2.2 Formulating your learning goals

Are you having a hard time formulating your goals? Take a look at the SMART method, which can help to clearly define what it is that you want to achieve. SMART stands for Specific, Measurable, Attainable, Relevant and Time-bound. Here, each of these terms is explained by using the example goal of a student who plans to better prepare for their exam.

- **Specific** - The goal is formulated clearly and describes a result that can be observed. Example: I will focus on lecture content and make flashcards for revision.
- **Measurable** - It is clear when the goal has been achieved. Preferably you can observe or measure this, by the final grade, hours spent studying, or by a stress-score that you give yourself each day and monitoring if this decreases over time. Example: I will have a set of at least 5 flashcards for each lecture that I can use to revise.
- **Attainable –** The goal is acceptable by you and others involved. Is your goal realistic? If you need help from others to reach your goal and they don't agree with your terms, the goal will be hard to achieve. Example: I will make flashcards for one lecture per evening, so I will finish making my flashcards after two weeks. As the teacher puts additional material online one day after the lecture, I will make a set of flashcards two days after the lecture.

- **Relevant (or Realistic)** – When the goal is an accurate representation of reality. Example: The student asks themselves if making flashcards will be relevant when studying for their exam.
- **Time-bound** - The goal needs a clear start and end date. If you formulate a goal without a time frame you won't know when you have achieved it. Example: The deadline of my goal is December 1st.

SMART goal example: To make at least 5 revision flashcards per lecture for all 12 lectures from my second period course by December 1st.

If you need more examples, you can easily find them by a quick Google search. Now, try to formulate your own SMART goals based on the requirements of your learning tasks and the learning strategies you want to use (Chapter 2.1). Note that setting SMART goals can be difficult for long-term goals or goals that cannot be measured. The aim is to use this method to get a better grip on the goals you want to set yourself during your studies, not to formulate everything SMARTly.

2.3 Make a study planning

In Chapter 2.2 you were prompted to think about the time needed to reach your SMART goals. Try to estimate how much time you actually have. With a low workload, planning is easier to schedule – but if you find yourself with too little time you will have to start prioritizing your tasks. In this way, you are more likely to be able to stick to a schedule. A global plan is used for longer periods and as the time periods get shorter your plan gets more precise. For example, you can make a global plan for an educational period of 10 weeks, in which you determine what your weekly goals are. In addition to this you make a detailed weekly plan in which you list the study activities for a certain week, so that you know what you need to achieve your weekly goal.

Getting started with a weekly plan.
When making a weekly plan, use a format that works for you. The internet provides many examples, but if you take the following tips to heart, you will already have made a good start.

- **Determine how many hours you have available for your studies.** Determine what is a realistic number of hours to schedule for your studies in the coming week. If necessary, divide the available hours into contact hours and study time. Strictly cut the hours which you know you won't be studying, because you already have other appointments or because you already spend enough hours on your studies that day for example. And, of course, don't forget to make time for enough sleep. You can find a template in Appendix A and learn more from this video.

- **Make an activity plan** Make an activity plan for each subject, insofar as this is possible based on the information you have. Indicate in this plan how you would like to approach the subject in the coming week. It may be useful to first make an overview of all the courses you are currently taking, including the exam requirements, the material, and the learning objectives. This helps in choosing the right activities.
- **Try to estimate how much time you will need.** Make an estimate of the time you think you will need to carry out the different activities. Plan some extra time for unforeseen events. We recommend that you keep two half-days free, so that you can postpone activities if you are running late or aren't able to study. In this way, you prevent procrastination from becoming a cancellation.
- **Compare the time available with the time needed**. If you do not have enough time for everything you have planned, take action. For example, choose to adjust your activity plan, or make more time available by cancelling or moving other activities.
- **Organise and schedule your activities.** Think about how you want to organise or cluster your activities. Many students like to plan the activities or tasks for each day, with an estimate of the time needed, but do not like to plan exactly what they are going to do at what time. It can also be unpleasant to do too many different subjects in one day. Think about what kind of planning suits you and find a template that gives you enough support and overview. Having a hard time prioritizing? Check out the module on priorities at Caring Universities.
- **Look ahead.** Look at your weekly plan and think about what could go wrong at the times you want to study. Always try to find two possible solutions.

3 During studying ('performance')

Learning outcomes

At the end of this chapter, you will be able to:

- Execute the strategies chosen during the planning stage, while monitoring progress toward your learning goals
- Be aware of your own habits and thought patterns.
- Define procrastination behaviour

After reading Chapter 1, you can make your own study goals, choose effective study strategies, and make a study planning. But what if you run into trouble while carrying out intended study or strategies? This chapter covers how you can keep on track by monitoring your progress and troubleshooting common problems you may encounter creating your ideal study environment.

Monitoring your own learning is part of the 2nd phase of the self-regulated learning cycle. During this phase, you execute the specific study strategies you previously chose and monitor the progress you are making towards your learning goals[3]. Continuously self-monitoring is essential to becoming a self-regulated learner because by looking back at your study behaviour and performance, you keep in mind the focus of the study task and motivate yourself. You can do self-monitoring by keeping a record of your study progress in real time or directly after each study session. This is much more effective than recording your study progress once a day or once a week. If you self-monitor directly after each study session, you can notice in time if you need to adjust your study goals or improve your study strategies.

Did you notice issues in your study behaviour?

- If you feel like you need some easy-to-apply tips to help you concentrate better when studying, take a look at Chapter 3.1.
- If you have tried these hacks before and don't feel like they help you enough, read Chapter 3.2 about the Pomodoro technique to up your productivity during the day.
- If you have problems with starting your study task because you keep procrastinating, Chapter 3.3 is for you.

3.1 Easy productivity hacks to get in the study mood

Though we may know many of the core elements of studying, many of us forget to leave ourselves the time, both mentally and physically, to execute them properly[4]. Though it requires thoughtfulness, simple reminders like those below can help us prioritise healthy study habits and facilitate self-regulated learning more easily.

- The power of good **sleep**: There are endless TED Talks on sleep and the innumerable benefits getting enough of it can have on our cognitive functioning. Consistency is key in this regard. Several recent studies[5,6] showed that while no correlation can be drawn between test scores and a single good night's sleep, achieving multiple days of quality, long-duration sleep, is strongly associated with increased academic performance.
- The power of a good **environment**: Especially important if you've found it difficult to study in your habitual spot – switch it up! You may find that after a couple days of studying at home you're more productive if you reserve a spot at one of our libraries or visit a new coffee spot in town. Purposely entering a study-environment often helps us set the mood for focus and concentration.
- The power of good **habits**: When you've found your reliably productive spaces, set a schedule, and encourage yourself to keep it up. It's easier to manage pressure when you have set times and spaces for both study and rest.
- The power of good **sound**: Music is an incredibly effective stress reducer[7]. What you listen to is up to you – a rule of thumb for study music is to avoid songs with lyrics as

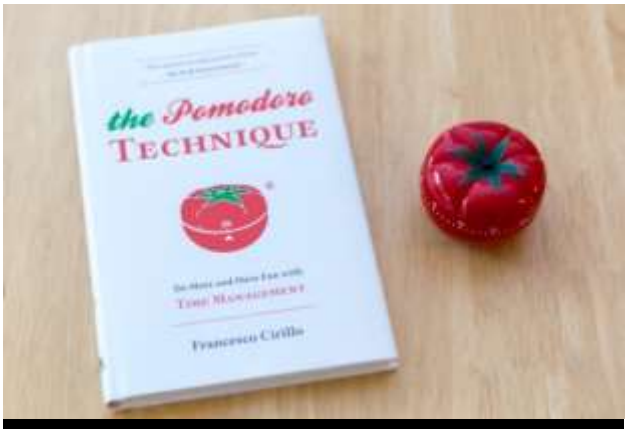
they may distract you. There are many study-music playlists to choose from, from instrumental music and lo-fi to ambient noise.

- The power of **limiting distractions**: A lot of the devices and applications we use daily are intended to hold our focus for as long as possible. When you're ready to study, make sure you do it in a space that minimises annoying background noise, away from the TV and housemates. It's often a useful exercise to keep distance from your phone as well, allowing you to be free of distraction for the length of your study session. The following apps are designed to help limit distraction in the digital world as well:
  - Trello: online project planner
  - Forest: reward yourself for avoiding checking alerts
  - Hold: app and internet blocker
  - Freedom: internet and website blocker
- The power of good **food**: Temporary energy boosts from coffee and foods with high-sugar contents inevitably lead to crashes. Help yourself avoid this by packing thoughtful treats to snack on during your studying. Seasonal fruit, cocoa products, mixed nuts – and most importantly water!

3.2 The Pomodoro technique

A popular tool for self-regulated time management is the Pomodoro technique[8] (Fig. 2). Instead of leaving what we may get accomplished during our study sessions up to chance, this technique prompts us to break our study sessions up into trackable time intervals known as 'pomodori' – 'tomatoes' in Italian. This abstraction is useful in maximizing our efficiency during the shortened study windows and ensures we give ourselves ample mental rest to keep from getting overwhelmed. By breaking down our workloads into small, manageable, pomodoro-sized pieces, it's easier to stay focused and motivated.

Often, we find ourselves faced with open-ended work that doesn't have a fixed end point, for example studying for an exam or doing research for a thesis. We can easily underestimate the amount of time these tasks are going to take, allowing small distractions to cause major delays or allowing ourselves to work past the point of our optimal productivity. The Pomodoro Technique is a simple method that uses gamified goal setting to help combat these common study pitfalls.



Often, it's easier to commit your full attention to a problem when you know there is only a brief amount of time to work on it.

Fig. 2: The Pomodoro technique (image source).

The technique is as follows:

- Step 1: Create a to-do list and get a timer
- Step 2: Set your timer for 25 minutes (or however long you want your pomodoro to be) and focus on a single task from your list until the time is up
- Step 3: Mark that you have completed one pomodoro
- Step 4: Take a 5 minute break
- Step 5: Every four pomodori, the break should be extended to around 15-30 minutes

Tasks	No. of Pomodori to complete
write 'intro to seismicity' paper	🍅🍅🍅🍅🍅
check my email	🍅
review lecture notes	🍅🍅
finish lab report	🍅🍅🍅
end-of-day review and prep for tomorrow	🍅

To make the most out of each interval, there are three important practices to keep in mind:

1. **Set realistic goals**: Check your to-do lists and estimate how many pomodori each task will take. If one of the tasks on your list will require more than four pomodori to complete, be sure to break it down into smaller, manageable steps. This will help to know what you can expect from yourself during each session.
2. **Bundle small tasks together**: Simple tasks on your list that will require less than one pomodoro to complete should be combined. In this way you'll end up with some pomodori dedicated to general admin, checking your emails, and following up on appointments, with others dedicated solely to a particular project.
3. **Respect the pomodoro**: Once your timer is set, commit to the tasks you've set yourself until it rings. Avoid doing things meant for the break or other pomodori such as checking personal emails or texting back a friend. Take note of any ideas or tasks that come up during your session in your to-dos and schedule time in for them later.

Sometimes there are disruptions we cannot avoid. In this case set your timer for a five-minute break and restart your last pomodoro again after it rings. It is recommended you keep track of these interruptions, as this will help you to keep mindful and work towards avoiding them during your next study.

The time intervals you set depends on your workflow. If you set your pomodori longer, increase the length of your breaks as well. If there's a project or task you're finding really difficult to just get started with, try setting your pomodori to 15, 10, or even 5 minutes. Short sessions may seem more informal and help take the pressure off.

This was just to get you acquainted with the Pomodoro technique. If you want to find out more, why it is so effective, and quick tips on how to start, search Google for blogs posts, read the official Pomodoro book, or find apps to help you time your study sessions:

- **Pomodor** for a simple web-based Pomodoro timer
- **Marinara Timer** for a shareable web-based Pomodoro timer
- **Forest** for a mobile Pomodoro timer
- **Be Focused** for Apple users
- **KanbanFlow** for combining Kanban with Pomodoro
- **Toggl Track** for combining Pomodoro with time-tracking

3.3 When procrastination is getting in the way

3.3.1 What is procrastination and why do we do it

Procrastination is a form of voluntary, irrational delay that has negative consequences on the individual. It is a habitual form of postponing action to a later date, without having a justifiable reason to delay. It is believed that procrastination interferes with the stage in between intention and action[9]. Take a moment to think about what causes you to fall into this gap ('the abyss of stuckness'; Fig. 3).

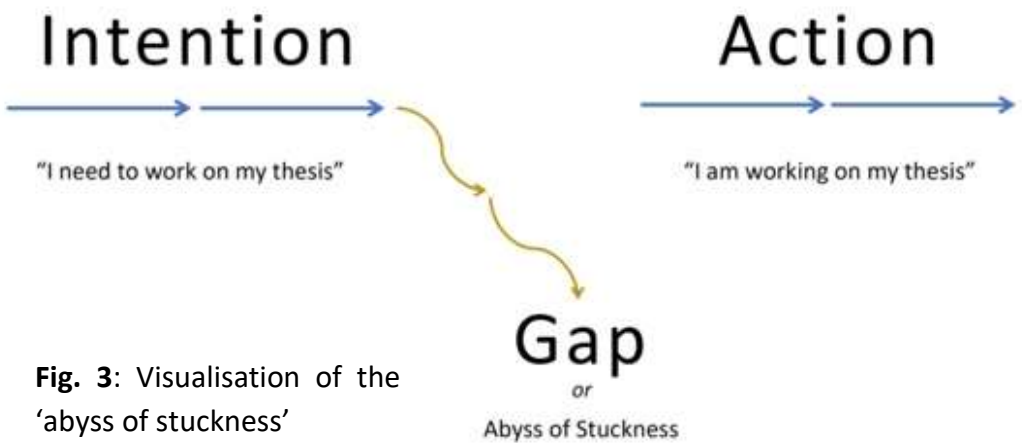


Fig. 3: Visualisation of the 'abyss of stuckness'

The general (combination of) reasons to fall in to the 'Abyss of Stuckness' are:

- Impulsivity[10]. You might get easily distracted as soon as an idea pops into your head. For example, when you are studying you might think about the dirty dishes in the sink and clean them instead of continuing your studying.
- Delay[11]. When a deadline is far away, you might use it as an excuse not to work on something or say that you work better under pressure.
- Proximity to temptations[9]. For example, when you have to work on a computer and can easily open social media or study in your student room which doubles as your living and relax space.
- Tiredness[10]. You might feel like you do not have the energy to sit down and work.

- Perfectionism or low self-confidence. You might avoid starting a task because you feel like you cannot reach the high standard that you want the end result to have.
- Learning disabilities. For example dyslexia, AD(H)D, autism, chronic illness, mental health disorders, or physical impairment. You might feel defeated before even starting a task or have trouble concentrating. Know that if you struggle with a disability, you can talk to the study supervisor of GEO who can help you apply for special facilities and support at Utrecht University.

Being aware of why you procrastinate is the first step in building up different responses and avoiding it. Often, it is a combination of several of the examples above that contributes to inefficient studying. Now that you are aware of which habits you easily fall into, mitigate your response by acknowledging the start of the procrastination behaviour, taking a short break, and starting your task again.

3.3.2 The Caring Universities procrastination e-module

If you feel like procrastinating behaviour is holding you back from achieving your goals and want to solve this, a good place to start is to follow the online procrastination e-modules of Caring Universities. Each module has a step-by-step explanation about habit, thought patterns, the definition of procrastination behaviour, and how to deal with this. At the end of one module you will get personalised feedback from your coach within one to two weeks. The online program is available year-round. On the platform you can get started in an accessible, anonymous, and free way. There are also modules available focusing on mood, stress, and corona-related complaints. Caring Universities is a collaboration between Dutch universities Vrije Universiteit Amsterdam, Universiteit Leiden, Universiteit Utrecht, and Universiteit Maastricht.

4 How did it go? ('Self-reflection')

Learning outcomes

At the end of this chapter, you will be able to:

- Identify the stages of the reflective process
- Reflect on your own learning efforts
- Determine the effectiveness of the strategic processes employed
- Attribute performance to internal, changeable, and controllable factors

4.1 The reflective process

The final tool in a self-regulated learner's arsenal is reflection. Reflection isn't static – it can be strengthened through practice. As you continue through the master's program, we hope reflection becomes a natural process of your learning. As an extension of critical thinking, reflection can benefit our studies in many ways. It allows us to[12]:

- Identify new knowledge and consider how we acquired it
- Provide a record of how our knowledge has grown over time
- Allows us to draw connection between previous knowledge and current topics
- Allows us to identify where breakdown of knowledge may occur
- Strengthen our reflective muscle, for application in future studies and career prospects

Thinking deeply about a past failure strengthens the mind's response to stress. Recent studies have shown that researchers who write critically on their own setbacks have reduced levels of the stress hormone cortisol, allowing them more control over similarly stressful tasks in the future[13]. Self-regulated learning is a cycle, and proper reflection is key to successfully perpetuating the cycle.

After having studied, it is useful to reflect on what you have done. Writing down reflective overthought does not seem very tempting, yet it is important to realise that once done it can help you with processing your own thoughts. Thus, to reflect, you need to have the courage to face and confront your own thoughts. As you probably know repetition is integral to learning -- the reason why is recognition. Recognition, realizing something has happened before, prompts your brain to revisit neural paths and strengthen the knowledge of which other sidewalks or exits are common alongside this path. With reflection one can effectively label thoughts and generalise them, causing you to not only think reflectively but act more thoughtfully in real time. For example, you may realise when you are procrastinating again. This "in the moment" realization is possible after having reflected on all the early warning signals in your mind. A useful exercise is to write these down to categorise them with known problems which you have experienced before.

4.2 Models and stages of reflection

Reflection is a skill that needs to be regularly trained. Especially since topics in the master's program are more theoretical and technical than during your bachelors study, it's natural to find information retention more difficult. Reminding ourselves of the different reflection methods outlined below can help us take a step back and appreciate which information we are digesting and where we should spend time getting a deeper understanding.

There are many common themes across the different reflection models, but each is slightly different – below are 3 of the most popular models in increasing complexity. Sometimes it's

more useful to do a simple reflection for a lecture or conference you just attended, or for a short brainstorming session. Other times, after completing a section of your thesis for example, you'll find an in-depth reflection is more useful. Read over the following reflection techniques below and make note of the ones that best suit your learning style.

4.2.1 The base models: ERA cycle and Driscoll's model

The simplest recognised reflection cycles[14] are those of Driscoll[15] (2007) and Jasper[16] (2013)[17]. They break the reflection process down into three stages. Experience > Reflection > Action. Also known as "ERA". Or in question form "What?" > "So What?" > "Now What?" (Fig. 4).

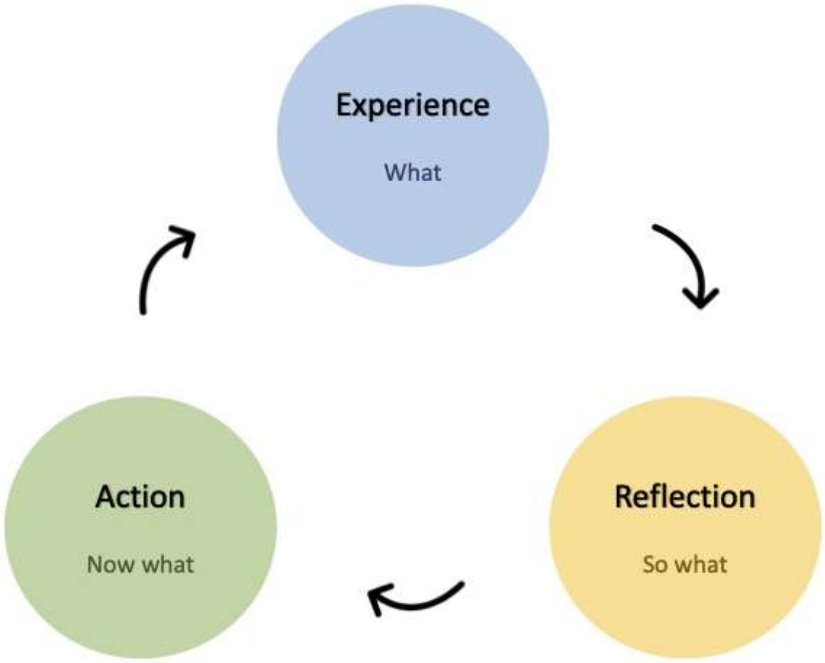


Fig. 4: Visualisation of the ERA cycle

To utilise these, we start with an experience. This can be a new learning outcome or one that you have covered before. The reflection may come after a success with the topic, or after you've recognised you're struggling. Questions we may ask ourselves to document the experience include:

<u>"What"</u>

- What happened chronologically?
- What learning outcomes were set?
- What results, work, or learning outcomes did you find yourself with at the end of the experience?

Once we've identified the experience, we reflect on how it has occurred as a whole. Questions we may ask ourselves during reflection are:

"So What"

- What were you thinking during the process? How did you feel?
- Did you find the experience positive or negative? Would this have been different under other circumstances?
- Do you recognise your behaviour working with this experience? Is this typical for you?
- How would you gauge the outcome of this experience? Does it align with the goal you set for yourself?

The final element is determining which action should follow. What we do in response to an experience varies per person. The action we take will result in a new experience, perpetuating the cycle once more. Over time, we should be able to determine which actions will lead to positive experiences for ourselves in the future. Questions to ask during this stage are:

"Now What"

- Should I change my behaviour or the type of activity if I want to achieve the same learning goal next time?
- Do my learning goals require a different activity?
- What types of learning goals do I want to set for myself in the future?

A valid outcome of this exercise could be to keep things the same and as such it should be noted that sometimes the outcome of reflection is to take no action. As long as you are honest with yourself about these reflections there are no wrong answers.

4.2.2 Kolb's experimental learning cycle

One step further from the simple "ERA" cycle is Kolb's experimental learning cycle[14, 18] (Fig. 5). This model expands the 'action' step, prompting us to reflect and understand the experience through active experimentation.

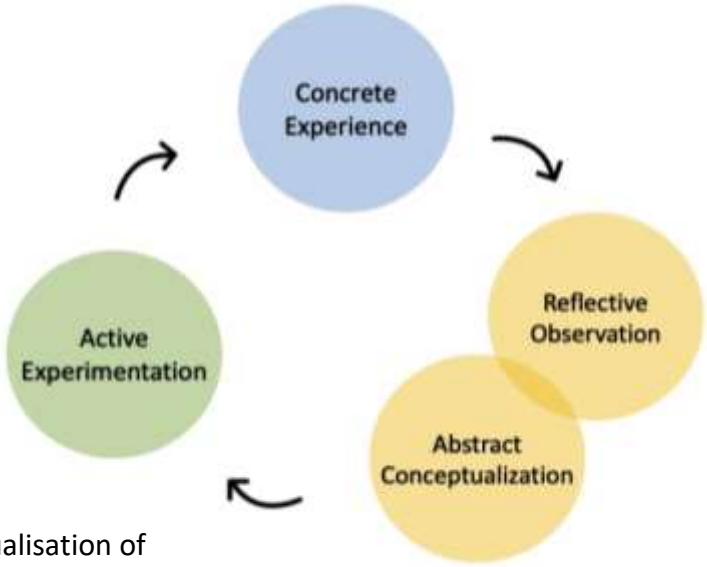


Fig. 5: Visualisation of Kolb's experimental

There are four key steps at play (Fig. 5):

1. Concrete experience: Here we explain the experience we have chosen to reflect on. You could be the one creating the experience or be the once experiencing it yourself.
2. Reflective observation: We reflect on said experience, using much of the same questions we asked ourselves for the "ERA" cycle. Specifically note down any discrepancies between the experience and your understanding of it.
3. Abstract conceptualization: Here, we track what we have learned from the experience. There are two types of valid entries. (1) Any new ideas that have arisen from reflection or (2) any modifications to existing ideas.
4. Active experimentation: Finally, we apply our abstractions to the real world. List future situations where we can apply our 'action' steps and once completed reflect on which areas this worked best in.

By using Kolb's model, we strengthen the connection between the results of our experience and reflections and how we've learned from them.

4.2.3 Bass's holistic reflection model

The final and most complex reflection model we will discuss is Bass's Holistic model. This model helps guide us through a deeper reflection on each stage.

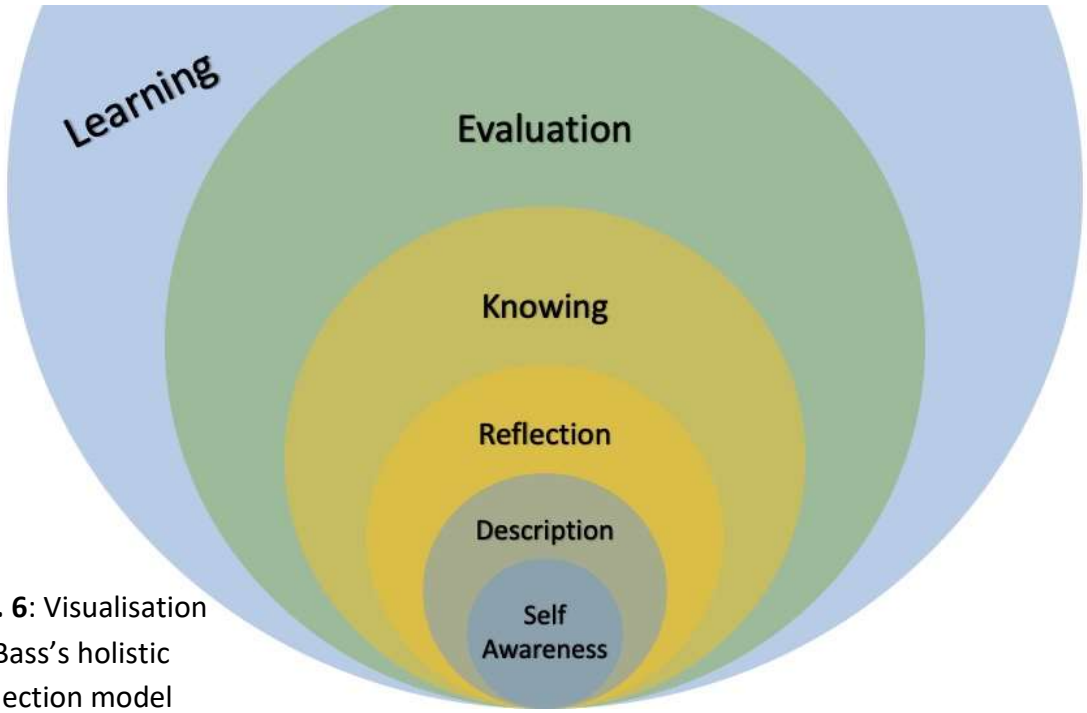


Fig. 6: Visualisation of Bass's holistic reflection model

There are six key steps (Fig. 6):

1. Self-awareness: This model starts a step before “ERA” and asks you to identify the situation you want to reflect on as you are experiencing it – in the moment. Take note of your thoughts, responses, and emotions. As these reflections are cyclic, this will help bring lessons learned through reflection into your real-world experiences.
2. Description: Here we provide a factual description of the experience. The fuller the description, the more the whole event is recalled and considered. Following stage one, we can indicate why this particular experience was important to reflect on and which aspects made it significant.
3. Reflection: In this stage we explore in greater depth the motivators behind the activity, ourselves, and the other actors involved. Questions to ask yourself include – what were the underpinning values and assumptions behind the experience? And what personal influence did you and others have on the experience? What factors contributed to the outcome?
4. Knowing: Consider what your current level of knowledge on the subject/experience is now post-experience. Identify which learning needs were met, and which could have been more supported. Did you expect too much from the experience, or was not enough expected of you?
5. Evaluation: Taking a step back, we are to analyse what went well and what can be improved. Consider knowledge, attitude, skills. This step is included to identify how things can be done differently in the future/what can be done in the future to make the experience better.
6. Learning: The final step is to take action to meet our personal learning needs. It is important to identify any changes in perspective that may have occurred since the experience, and how the outcome of this experience will influence the way you approach the next one. Here we state what learning was internalised, what future goals we want to set for ourselves, and a plan of action to achieve that.

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6 Appendix A – 24 hour weekly schedule

Time	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
5:00							
6:00							
7:00							
8:00							
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