6.
APPROACHES FOR EFFECTIVE LEARNING

'Tomorrow's illiterate will not be the man who can't read;
he will be the man who has not learned how to learn.'

Alvin Toffler

This chapter deals with the following content:

- the method of steering your own process of learning and examples of effective strategies for studying;

- how you can provide your own motivation for study when you are 'running on empty' or lack will;

- a presentation of making up your own good notes from written materials or lectures.

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Since students have already successfully passed their matura (school-leaving) exam, which has allowed them to actually become university students often there is a (mistaken) belief that they know how to approach learning effectively. However numerous students in the first (and also higher) year, despite the relatively large quantity of study material that they should explore independently, often find themselves in a situation that is frustrating and stressful. They do not know how to even begin with such a quantity of material, and how – generally in a limited time – to go over it most efficiently.

6.1.
What does the theory of effective learning for students say?

If one tried to describe effective learning – i.e. **learning where the student understands the study material and also remembers it well** – through a key characteristic, one could technically say this: effective learning is **self-regulated learning**.

The essential characteristic of such learning is that the **student is capable of directing their own learning process to the ultimate (learning) goal**. And in fact students often find themselves in situations where they are expected to be capable of independently looking over specific material and independently gaining information and knowledge. Self-regulated learning therefore involves learning that the student has under control, or as Pintrich and de Groot (1990) note vividly, it is **learning where students are active participants and not victims of their own learning process**.

Self-regulated learning includes the regulation or directing of three aspects of the student's learning (Zimmerman, 2001):

1) **directing cognition**, which includes **control** of various **cognitive strategies** for learning, such as strategies of deeper processing of material, which is reflected in a better understanding of the material and better academic performance;

2) **directing motivation and feelings**, which includes **controlling and changing motivational beliefs**, such as self-efficacy, target orientation, whereby the student can adapt to the requirements of the study/assignment, while at the same time learning to **control their own feelings** (especially those less productive, such as fear) with the aim of improving their learning;

3) **self-regulated behaviour**, which includes active control of various **resources** available to the student, such as **time, environment** (e.g. the space where they will be studying) and **social resources of help** (fellow students, tutors and others) that can help them.

This directing of cognition, motivation and behaviour requires well-developed **metacognitive abilities**, which enables students to be able in any instance of learning to select appropriate learning goals, then to plan the learning process, monitor it and in the end also evaluate it.

There are numerous programmes for developing self-regulated skills among learners, with the majority intended for younger people – primary and secondary school pupils. But it is not too late for university students – they can opt to develop certain self-regulated skills that can offer a more systematic approach to studying, which generally leads to better academic performance. Review studies on the effectiveness of self-regulated learning programmes (e.g. Dignath, Buettner and Langfeldt, 2008; Hattie and Donoghue, 2016) have shown that participants of these programmes improve their study achievements most if they exercise the use of cognitive (especially elaboration and organisation), metacognitive (especially planning strategies) and motivation strategies.

First you need to know the effective learning strategies in order then to be able to use them in studying. To this end, presented below are some basic learning strategies for effective study. Here the expression **learning strategy** denotes the **sequence of (thought) steps in going over study material** (Pečjak and Gradišar, 2015), where it should be pointed out that the majority of study material is in written form.

Effective study most often includes reading material and then immersing oneself in it through the use of various learning strategies.

6.2.
Strategies for effective study and their application

Below we present three basic groups of strategies (stemming from the theory) – cognitive, metacognitive and motivation strategies, with characteristic activities within individual groups of strategies.

6.2.1.
Cognitive strategies

The basic purpose of using cognitive strategies is **understanding and memorising** study material. Most commonly these strategies are divided up in terms of the thought processes that flow in learning into:

- **strategies of repetition**;
- **elaboration strategies**;
- **organisational strategies** (Pintrich and Garcia, 1994; Pečjak and Gradišar, 2015);
- **strategies of balancing resources** (McInerney and McInerney, 2002; Hattie and Donoghue, 2016).

6.2.1.1.
Strategies of repetition

Strategies of repetition enable you to select information from text and store it in your long-term memory, thereby memorising it. **Without repetition there is no memorising** of study material, so in planning the study process it is **imperative to reserve some time for repetition**. Strategies of repetition are important for memorising both fundamental data and also specific details in each subject of study.

Here we may observe:

a) Strategies of repetition in simpler assignments, which include for instance repeating out loud certain key words/sentences, re-reading the material and using memorising tools (mnemonics). The primary purpose of such repetition is simply mechanical memorising. Multiple repetition leads to what is termed overlearning, meaning that then it is very easy to recall the necessary information/data you need. Such repetition makes sense in certain study situations, when you need to recall specific information practically automatically, so that then you can resolve more complex learning problems.

Examples:

Learning words with the aim of expanding vocabulary in a foreign language (a student of English studies repeats for instance the conjugation of irregular verbs or certain collocations so that then they are able to use them fluently in conversation).

When a student wishes to have good mastery of a certain procedure, in order to be able to carry it out in practice (e.g. a student of psychology with steps in holding a counselling talk or a student of carpentry with the process of pre-working the wood before making a specific product).

b) Strategies of repetition in more demanding assignments, such as repetition on material worked on in a textbook or repetition with one's own lecture notes. Both cases involve reworking the existing textbook material or lecture for the purpose of repetition. Material reworked in this way should include **underlined or marker-indicated important information or parts of the text in the textbook (or appropriately crafted extracts from the textbook) or lecture notes**. For more on the creation of good notes from a textbook or lecture see chapter 6.3.

6.2.1.2.
Elaboration strategies

Elaboration strategies are strategies that enable a **deeper understanding of the study material**, which is the starting point for the application of knowledge in solving problems (including more complex ones) and in transferring knowledge to new situations. Using these strategies you can deepen your understanding of new study material by linking new information to already existing foreknowledge.

Examples of such strategies can be seen in activities such as:

- repeating study material in your own words (paraphrasing);
- asking yourself questions about the study material and answering them;
- explaining the study material to others or teaching others (e.g. colleagues);
- seeking similarities and differences in study material;
- analysing the relationships between parts of the study material.

6.2.1.3.
Organisational strategies or strategies for arranging information

Organisational strategies or strategies for arranging information represent a basic tool on which you can 'hang' information when learning a specific subject. It is good if you know how to arrange the information in a way that makes sense to you, which helps you to more easily include it in existing foreknowledge and in this way memorise it more rapidly.

These strategies are most often seen through the following activities:

- merging specific pieces of information (details) into broader conceptual categories (hypernyms) with the aim of relieving your working memory and thereby memorising more;
- presenting the relationships between key concepts in the form of conceptual networks (e.g. thought patterns);
- arranging information hierarchically (from more important/general to less important/specific);
- using other graphic methods for presenting the study material (e.g. Venn diagram or comparative matrix in comparing two or more elements from the study material; timeline or graphic display where the sequence of events in a process, phenomenon etc. is important) and so forth.

6.2.2.
Metacognitive strategies

These are strategies of awareness, understanding and control of one's own process in learning. Metacognitive strategies include:

- strategies for planning;
- strategies for monitoring;
- strategies for balancing and
- strategies for evaluation of learning.

6.2.2.1.
Strategies for planning

Strategies for planning are those strategies that you **implement before the process of studying** as a preparation for study. They help to activate foreknowledge, while at the same time helping in the selection and use of appropriate cognitive strategies for which reason understanding the material is easier/better.

These are the following strategies:

- **Selection of learning goals** (which should be realistic) **and appropriate strategies** for achieving them. The following questions will help you in this: 'What does the assignment require?', 'What is my goal or what do I want to know in the end?' and 'What information and which strategies do I need?'
- **Balancing time**, such as allocating study time to individual study components.
- **Balancing the learning environment** in the sense of selecting and arranging a study space that is not disruptive (peaceful, without a telephone and other distractions). The question: 'How much time and what resources do I need?'

Examples:

- You have to work on the material so that you will understand it well, since you will also need this knowledge in other subjects. Or: Since you know the exam will be very challenging, you will be satisfied even with a lower grade.
- For a challenging exam you should start studying a month in advance. Divide up the material so that in three weeks you 'get through it', then in the final week you just repeat.
- To make up a seminar assignment you should look at the fundamental literature in the faculty library and seek out the latest articles on the topic in journals.
- Since you know that it is hard to stay focused in a student room because of your housemates, it is better to go and study in the university library, where it is quiet.

6.2.2.2.
Strategies for monitoring

Strategies for monitoring relate to the actual process of solving problems and learning. They can be used to assess the effectiveness of the use of various strategies. They include directing attention to the study material, monitoring understanding in terms of asking questions 'Do I understand what I am learning?' and so forth.

Questions related to monitoring include: 'Do I understand what I am doing?', 'Does anything bother (distract) me when I am studying?', 'Am I focusing my mental effort on the material?', 'Am I on the right track and heading for the goal?' and 'Do I need to change anything?'

Examples:

- Underline unknown technical terms in the textbook, so you can find an explanation immediately after reading – using an online dictionary or asking a colleague.
- Ask yourself the question: 'Is my mind still on the material or have I lost the thread?'
- Ask yourself: 'Am I too focused on the details and in the time available will have difficulty getting through the study material?'

6.2.2.3.
Strategies for guiding the learning process

Strategies for guiding the learning process can be used when you realise that something in the process of learning or solving problems is not going well or properly.

Examples:

- When you realise that you do not understand something, read that part of the material again.
- For harder parts of the study material slow down your reading speed – read slowly and think about each sentence.
- If you do not know how to answer a question at the end of individual parts of the material, run over the material again and try to find an answer.
- If you find that you are taking too much time to study an individual part of the material and you are not going to get through it all in time, extend your study time or try to learn just the most essential things.

6.2.2.4.
Strategies for (self-)evaluation of learning

Once you have finished learning it makes sense to evaluate your own learning – both the learning outcome and the process of learning. Here the following questions can help you: 'Did I achieve the goal?', 'To what extent did I achieve the goal I set at the beginning?', 'What was effective?', 'What was not effective?' and 'Next time will I do anything differently, and if so, what?' and so forth.

Examples related to achievement:

- Ask yourself whether you achieved the goal you set yourself at the beginning.
- Do you understand the material?
- Do you know enough to be able to pass the exam?
- After studying, check the correctness of the mathematics assignments in the solutions appendix.

Think about whether your method of learning was effective:

- Did you plan it properly and have enough time to complete the assignment?
- Did you select an appropriate learning environment so you could be focused?
- Did you select the appropriate strategy, or will you try something different next time?

Merely knowing strategies and how to control and direct the study process is not enough for a good study outcome. Just as important as **knowing how**, is **wanting**, which includes knowing and balancing different **emotional and motivational beliefs and strategies**.

6.2.3.
Emotional motivation strategies or how to self-motivate to learn

Emotional motivation (or affective) strategies influence one's will, or the amount of effort that the student is willing to invest in studies, and behaviourally this manifests as **perseverance in studying**. In the background of these strategies are various motivational beliefs, such as **interest in the study material**, a **feeling of competence** (the belief that you are capable and will arrive at the goal) and **target orientation** (either towards understanding or mastering the material or merely towards achievement – for instance that you pass the exam). All these are 'motors' of internal motivation. It makes sense, therefore, to ask yourself, how as a student can you change those beliefs so you will know how to self-motivate for studying. Some initial questions to raise specific aspects of learning motivation are shown below (Table 8).

Table 8: Questions to raise one's own learning motivation

Motivation elements	What increases it?	Questions or strategies
interest	**usefulness of knowledge**	'Where will I be able to use what I've learned in subsequent study?'
		'Where will the study material benefit me or help me in everyday life?'
	connecting with **experiences and goals**	'How can I connect what I am learning with my own experiences?'
	satisfying the **need to socialise**	'Would it be easier to learn with a colleague?'
		'Could I perhaps repeat the material with someone after studying, to see how much I know?'

perceived competences	detailed **feedback**	'What have I already mastered and what not yet?'
	setting **realistic and short-term goals**	'How much can I really learn?'
		'Do I need to really understand everything or is it enough to just memorise certain things?'
	help	'Can someone help me to study? Who?'
target motivation focus	**monologue focused on mastering**	'I convince myself to study intensively so I will master the study material.'
		'I convince myself to stick with studying and test myself to see how much I can learn.'
		'I challenge myself to complete the assignment and in this way learn an important thing.'
	monologue focused on achievement	'I take note how important it is that:
		... I get a good grade.
		... I do well in the exam.
		... my grade will go down if I stop studying.'
	monologue focused on avoiding showing your own inabilities	'I tell myself that I need to try a bit harder not to appear stupid.'
		'I think about how it would be really unpleasant for me to have a worse result than others.'

These questions and strategies include those that raise motivation to study, and those that reduce it.

Motivation to study is generally **raised** by the following strategies:

- **Defensive pessimism**, where you imagine negative feelings if you fail (disappointment, sadness at yourself and others) and in this way prepare to study.
  - Example: When you just think how complicated your life would get if you do not pass this exam, it is enough to get you opening your books.
- **Effective styles of ascribing reasons** in the case of failure, when you are seeking reasons for your own failure in yourself and in factors over which you have control (e.g. in your own efforts).

- **Self-affirmation**, when you try to increase the sense of your own effectiveness with the statement: 'I know I can do this, I've already done this kind of assignment.'
- **Encouraging monologue**, focused on mastering, on achievement or on avoiding showing your own inability (see Table 1). This also includes the ability to direct attention from an assignment you do not know how to do, to another assignment, and in so doing not to get overwhelmed by negative feelings (e.g. you do not experience panic).
  - Example: If you do not know how to complete a certain assignment in mid-term exams, you do not panic and move on to the next assignment. You tell yourself that you will go back to it at the end.
- **Self-boosting**, where you reward yourself if you persevere in studying something to the end.
  - Examples: When you have worked through two chapters, you will reward yourself with chocolate or beer. When you finish studying tomorrow, you are going to the cinema with a friend.

The willingness of a student to study is generally **reduced** by the following strategies:

- **Self-blocking**, where you are not focused on success, but on protection of your own self-image – not wanting to shame yourself in front of others. This is usually evident in putting off studying to the last moment, so you can justify your failure by having insufficient time.
  - Example: I would have done better on this assignment/exam, if I hadn't procrastinated so much on writing it or studying.
- **Non-productive styles of attribution**, where the student seeks reasons for failure outside themselves and in factors over which they have no control (e.g. in their abilities).
  - Examples: A student in the first year of an undergraduate course says: 'That professor is asking as much from us as if we were doing a master's course. I simply don't have the head for statistics.'

6.3.
Strategies to make studying a piece of cake

The majority of studies involve you using textbooks or other study (mostly written) material or lecture notes, so we will focus on a few effective strategies for working with textbook material or your own notes.

6.3.1.
How do you tackle studying from a textbook?

For an initial review of the material in a textbook you can apply the **rapid overview strategy**. This means that you **browse quickly** through the study material – in a few minutes. Here it is good to know that in textbooks the important information is most often 'concealed' in the following places, so as you browse through, stop or take a closer look at:

1. the title of the text;
2. subheadings;
3. graphic material;
4. the beginning of the study material;
5. the end of the study material;
6. the envisaged essence, main thoughts.

Based on browsing through the study material, in the first five steps you will be able to formulate a picture of the material, the construction and possible difficulty of the material, which will help you in further planning your studies. In the sixth step, based on the information you gained during your browsing, and your own foreknowledge that you activated, try to predict what the specific study material will probably be dealing with.

With this strategy you are just 'warming up', then you can start in on a close reading and scrutiny of the material. Here during the reading itself you can **mark material in the textbook** or **write it out**. At this point it is advisable to take heed of the following tips:

- **Selectively underline or write out the essential information** (there is no need to underline too much or note down everything, but just the key concepts, important details and the relationships between them).
- When you mark important parts of study material **with markers**, use them in a **specific system** that you yourself choose/determine. For instance mark parts of the material that are most important (the most general) and without which you will not pass the exam, in red; information that is lower down in the hierarchy of importance, in yellow, and green for information representing specific details and data.

6.3.2.
How do you take good notes from lectures?

In **taking lecture notes** it is worth adhering to the following principles for effective note-taking:

- A note of the title and date of lecture, or an explanation, which helps recall the information later when studying.
- Do not transcribe text from PowerPoint presentations. It often happens that students are so taken up with writing down the text from the slides that they stop actively listening to the lecture. This leads to them not noting down what the teacher is explaining and what is not on the slide.
- Mark what the professor underlines as important (in colours or in some other way).
- After lectures look over your notes (this is very important, but students do not often do this).

Some suggestions for **effectively reviewing notes**:

- look over your notes immediately after the explanation or lecture has been given (this helps retain the information in your memory);
- before each new lecture, read through your previous notes (it does not take long, but helps put new information more easily in context);
- when reviewing again, mark everything that does not make sense, that you do not understand, and then ask for an additional (repeated) explanation from the teacher or a colleague.

An effective strategy for creating good notes that enable effective repetition is the **Pauk strategy**. Arrange your notes from a textbook or from lectures by preparing an appropriate template (in a folder or in a Word document on your computer), as shown in Appendix 10.

This strategy has four steps:

1. in reading/listening to a lecture **take notes** using the principle of efficient note-taking in the wider space (field 1);
2. after lectures or reading, **review** it and where necessary **correct and supplement the notes** – insert or delete individual words/sentences, improve the method of organising the main thoughts, underline key terms and so forth;
3. summarise what is written in field 1 in a short form of essential **keywords** and write them down in field 2;
4. **repeat the study material** by describing, explaining, substantiating and so on the keywords with details from field 1 and explain the connection of the keywords. Repetition can be oral, but can also be performed by summarising in writing all the important points in the form of a summary (field 3).

In conclusion

I am certain that in these presented strategies and tips, both students and student tutors will be able to find something beneficial and useful, first and foremost for themselves. At the same time both students and tutors will be equipped with new knowledge about effective learning strategies, they will more easily talk amongst themselves about challenges in their studies and together they will find ways of studying more effectively. I believe that tutors and students will in this way become active co-creators and not victims of their own studies.

But you need to be aware that, just as in everything, in studying only practice makes perfect, and only trying out different strategies will help you uncover those that are best suited to you and with which you will be able to achieve your study goals.

Good luck to you all in studying – and full steam ahead, now that you know how!

You can read more about the strategies presented here and elsewhere in the book:

Pečjak, S. and Gradišar, A. (2015): Bralne učne strategije (Reading Study Strategies). Ljubljana: National Education Institute.

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