

Effective Learning Strategies

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Pedagogická fakulta

INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

Outline of the Study Text:

1. Current trends in higher education
 - 1.1 Changes based on the massification of higher education
 - 1.2 Changes due to making the transition from secondary school to a higher-education institution
2. Concept of study achievement and strategy for the prevention of study failure at higher-education institutions in the Czech Republic
 - 2.1 Concept of study achievement/failure and the factors affecting it
 - 2.2 Obstacles to successful studies at higher-education institutions
 - 2.3 Study-failure prevention and counselling-support possibilities at higher-education institutions in the Czech Republic
3. Learning as viewed from the perspective of several theories
 - 3.1 Behaviourism
 - 3.2 Social-cognitive theory
 - 3.3 Information-processing theory
 - 3.4 Constructivism
4. Implications of four important theories of learning
 - 4.1 Implications inspired by behaviourism
 - 4.2 Implications inspired by social-cognitive theory
 - 4.3 Implications inspired by information-processing theories
 - 4.4 Implications inspired by constructivism
5. Self-reflection
6. Self-regulation
7. Actual work with the subject matter – preparation
8. Reading and critical thinking
9. Writing an expert text and preparing a presentation
10. Preparing for an exam
11. Development of social skills
12. Development of emotional stability

Basic Information about the Subject

The goal of the subject is to introduce students to the current trends in the area of higher-education instruction, the conditions for success when studying at a higher-education institution, and the possibilities of systematic and individual support. An emphasis will be put on the self-diagnostics of one's own learning style and prerequisites and on analysing one's strengths and weaknesses with regard to learning and related skills. Students will learn a whole range of metacognitive, cognitive, social and affective strategies and techniques that are useful for increasing the efficacy of their studies.

Introduction to the Subject (Summary)

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Background Information on the Subject

Instructor: Mgr. Kateřina Juklová, Ph.D.

Contact: katerina.juklova@uhk.cz

Number of Direct Training Hours: 26 hours

Number of Self-study Hours: 13 hours

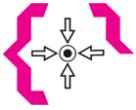
When Taught: 4th semester (recommended)

Prerequisites: none

Rules for Communicating with the Instructor: By e-mail and based on pre-arranged consultations

Requirements for Completion: The student will earn credit based on his/her active participation in seminars and a discussion about his/her term paper.

Meaning of the Icons in the Text



Objectives

A list of objectives is provided at the beginning of each chapter.



Time Demands

An estimate of how much time you will need to study the chapter.



Terms to Remember (Key Words)

A list of important terms and main points that the student should not neglect when studying the topic.



Practical Application

Stimuli for practical application of the topic. Often includes a test or stimuli for reflection and self-reflection.



Review Questions

Verifying to what extent the student has understood the text and the issue and remembers fundamental and important information.



Summary

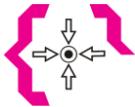
A summary of the topic.



Literature

Used in the text and to complement and further one's knowledge.

1 Current Trends in Higher Education



Objectives

After studying this chapter:

- you will have an overview of the basic trends that are applied in current higher education;
- you will be able to explain how your study results can be affected by these trends.



Time Demands

2 hours



Terms to Remember (Key Words)

- massification of education
- Bologna Declaration
- EHEA (European Higher Education Area)
- M. Trow's concept of the transformation of higher education
- elite education
- mass education
- universal education
- consequences of changes at the institutional level
- consequences of changes at the pedagogical level
- consequences of changes at the student level
- changes when moving from secondary school to a higher-education institution
- modularisation of the curriculum
- ICT literacy
- autonomous learning
- self-regulation
- individualisation of instruction

1.1 Changes Resulting from the Massification of Higher Education

Czech higher education has undergone more than 20 years of dramatic development. The relevant events that have taken place in the Czech Republic since the 1990s primarily include the fall of the totalitarian regime and the shift towards Western European values. Following in the footsteps of these



countries, education in the Czech environment has become a necessary investment in one's successful future, an investment which people are willing to pay for. Since the 1990s, Czech higher-education reforms have been prepared whose essence is particularly to make higher education accessible to a growing number of students. Towards this purpose, the number of higher-education institutions has begun to grow, including a significant number of private higher-education institutions.

The procedural changes at a European level arrived primarily in 1999 after the Bologna Declaration was signed. In this Declaration, the ministers of 29 European countries pledged to create an open area for higher education in Europe (European Higher Education Area, EHEA). The particular measures approved by the ministers included the following: adoption of a system of easily understandable and comparable degrees and a system of credits (ECTS), support of student and teacher mobility, and quality assurance.¹ For the Czech educational system, adherence to these values was supposed to guarantee a rapid overcoming of the totalitarianism-affected situation and a shift towards Western European countries.

The fast-growing number of students has been a dominant development trend not only in Czech higher education, resulting in a range of changes in higher education. The massification of higher education and its consequences are reflected in many models, among which the best known and most cited is the concept of the transformation of higher education by the American Martin Trow (2005), which originated already in the 1970s. Depending on the share of the increasing number of higher-education students out of the total population, Trow describes three stages of education:

- *The stage of elite education* is limited by the maximum share of students from the relevant age cohort of 15%. At this stage, higher education is only available to the elite of the society, represented by highly endowed individuals and citizens with a high social standing.
- After exceeding the 15% share of population with higher education in the relevant age cohort, Trow talks about *the stage of mass education*. As opposed to the goal of preparing the nation's elite for making decisions about the whole society, as was the case in the stage of elite education, higher education is now used to prepare the management of

¹ Available at <<http://www.bologna.cz>>. [Retrieved on: 2.2.2014]



economic organisations and to pass on concrete skills rather than to cultivate the entire personality of the individual.

- After exceeding a 50% share of the population with higher education in the relevant age cohort, we enter *the stage of universal education*. The goal of higher education, which in this stage is obligatory for many professions, is to contribute to the adaptation of the population to dramatic and ubiquitous social and technological changes.

With the quickly growing number of students, there are also more changes in the requirements of and demands for the individual components of the system. In the following paragraphs, we will describe a few of the most important ones.

Changes at the institutional level

- These apply not only to the increased number, but also to the **growing diversity** of higher-education institutions. From small, comparable universities, the system is changing and new ones are being established, e.g. private and diverse tertiary institutions. It is becoming less realistic to reach a consensus within the academic community of such an increased number of universities. Thus, values often get ground down and the feeling of individual employees' belonging to a university weakens.
- In terms of **power and decision-making mechanisms**, in the mass-education and universal-education stages, an elite university, which used to be characterised by its rector having the majority of power, changes into an institution with other interested parties involved in its decision-making – political representatives, representatives of potential employers, and the public. Academics thus lose their unique and privileged status.
- More changes are appearing in the **administration of universities**. The administration of institutions, formerly carried out by instructors without managerial or administrative education, is becoming ever more professionalised and dependent on experts such as financial or project specialists. With the increased number of students, academic self-government weakens and the share of state powers increases.



Changes at the pedagogical and university-employee level

- A **university curriculum** is usually **modularised**, i.e. divided into smaller wholes and units, which are more accessible to many students of other fields or coming from abroad. The modularisation of education and the credit system are supported in Czech tertiary education in connection with efforts to obtain an instrument for recognising sub-parts of studies and for ensuring the horizontal throughput of studies between schools of various disciplines, including schools abroad. Such a divided curriculum, however, can also have disadvantages in addition to the aforementioned advantages. For instance, there can be problems within the framework of individual subjects when there is insufficient integration and synthesis of knowledge between their guarantors and instructors. Partial components are then viewed as mutually independent. The pedagogue then does not have to show any interest in the existing level of the student's knowledge and, within the effort to implement only the curriculum of 'his/her' subject, can overlook the student's insufficient knowledge and set overly high study objectives. In other instances, the content of his/her lectures can copy other subjects. The large number of students and the high degree of anonymity of the university environment also contribute to situations in which inter-disciplinary relations and the comparison and integration of knowledge get pushed into the background.
- Lectures begin to dominate the **methods of passing on the curriculum** and individual contact between instructors and students is reduced. Contact with the instructor during instruction is often restricted to initial instructions and the review of final outputs without the opportunity to grasp the development of the individual competences of the student or the need of the group as a whole, let alone the needs of some 'more different' individuals. The number of quantifiable indicators in education increases. Progress in one's studies is expressed by the number of earned credits and universities are assessed according to the number of graduates. For the time being, we do not know how to reliably determine quality.
- Combined studies and distance studies are becoming more frequent forms of instruction and create conditions for the intensive use of **computer technologies** and in particular of **e-learning**. Today's instructors and students cannot do without electronic-communication



skills, the use of the Internet and e-learning. This is the way to register for one's studies, to submit one's assignments, to communicate with instructors, and to have discussions with one's colleagues. This format is also used for the entire studies-related agenda, which can be burdensome both for the pedagogues and the students in the initial stages. Apart from the need to focus on the subject curriculum, they also need to focus on the skills related to working with the faculty information system, text editors and communication portals, and on using the computer as a source of important information and messages.

- The growing number of students results in a **higher workload** and **more administrative duties** for many university employees. In connection with the development of using ICT, there is also a need for further education not only in one's own field, but in various related fields (foreign languages, diverse computer applications). The increased diversity of students also results in the obligation to adapt the curriculum to more diverse groups (e.g. students with specific needs, combined-studies students who have been working in the field for quite some time, etc.). On the other hand, according to many educators at the tertiary level, the level of requirements placed on differently endowed students is decreasing and so is the quality of education. According to Trow (2005), the stage of universal education involves giving up on standards. Instead, a tertiary institution in the stage of universal education usually focuses on the question of what the university should provide to various groups of students.
- Individual work, targeted differentiation and support of some student groups (e.g. graduates from vocational technical schools) are almost ruled out due to the limited number of university pedagogues and some other factors related to human-resource management at universities. In this connection, Beneš and Závada (2011) point out the rigidity of the career system with strict habilitation requirements, which does not necessarily correspond to the needs of the current diversified tertiary system. As a result of this, practical experts within the ranks of university pedagogues are leaving as they are demotivated by the low level of remuneration related to the professional position which the system assigns to them.

Changes at the student level



- As the number of students grows, the differences between them as a group also increases. Today's student does not necessarily begin higher education immediately after his/her secondary-school leaving examination, as a large share of students study at a later age **while employed**. The centre of their attention is thus not only their studies, but also their work and frequently their family.
- The **initial motivation of students** with regard to studying and learning is also different in connection with their diversity. Even though there are still people who become students as a result of their own decision and having an interest in a particular field, a significant number of students are primarily interested in higher education as a way to remain in their current job or to move up to a higher pay grade.
- University students make up a diverse group not only in terms of their motivations for their studies, but also in terms of **study prerequisites and dispositions** (intellectual abilities, attention, memory, expressive skills, emotional stability, strength of volitional attributes, etc.). At the same time, today they commonly include students with a handicap who are entitled by law to the consulting services of special-education centres.

1.2 Changes due to Making the Transition from Secondary School to a Higher-Education Institution

The university academic environment emphasises **independence, information awareness** and **responsible decision-making**. The competences of **critical thinking** and **managing one's learning** are gaining in importance. However, this can be in contradiction to the concept of learning in which students, especially in combined studies and distance studies, have been educated during their lives. Uncertainty, feelings of confusion and being caught off-guard due to the possibility of choice appear. Students then require from the instructor before their exam the complete material to be examined. They can also have problems with critical thinking. It is up to the instructor whether he/she obliges the students or whether he/she will lead them towards the independent gathering of knowledge from various sources and towards critical thinking. Compared to what the students did at secondary school, the subject matter is usually not only more voluminous, but also more demanding. Usually the subject matter does not have a fixed scope and it is expected that



the students will use various sources. In addition, the majority of instructors expect from their students more than just memorising the content of their lectures – they want students who are capable of independent thinking, who are willing to resolve new problems, and who think critically. This can be the cause of initial problems and the need to become accustomed to another method of work. Students can feel lost in the amount of diverse information and be worried about whether they will manage to read all of it.

In terms of **organising one's studies**, another fundamental change lies in the fact that the student is not obliged to attend school daily. This necessitates the management of one's own time responsibly and managing the processes of learning and motivation. Without this, one has no chance to learn the huge amount of subject matter which will be on the exam. The method of assessment is also different. Results are required only at the end of the term; the assessment usually is not immediate, ongoing or formative, but the student is assessed once per term. From the pedagogical-psychological surveys conducted in our university environment (e.g. Košťálová, Miková and Stang, 2008), it appears that ongoing monitoring of student performance and the connection of knowledge units into meaningful larger wholes are missing from the majority of higher-education institutions. Another important factor is, for instance, the size of study groups. Groups which are too large lead to anonymity and limit the natural exchange of opinions, experience and peer support. This can also add to the nervousness and stage fright of students before having to give a presentation and can block their natural curiosity. However, this is also significantly affected by the approach of the instructor with regard to his/her presentation of the subject matter and to supporting discussion within the group.



Practical Application

- Try to assess the organisational conditions in the field(s) you are studying. Which do you consider functional and which make your studies harder? What would you change if you could?



Review Questions



1. What events initiated the changes in Czech higher education in the last 25 years?
2. What is the primary trend of these changes?
3. What event changed tertiary education on the pan-European level?
4. What stages in the development of university education does Martin Trow discern in his model of transformation? What are their criteria and essence?
5. What consequences have been suffered by institutions vis-à-vis the massification of higher education?
6. What consequences have been suffered by the employees of higher-education institutions (especially pedagogues) vis-à-vis the massification of higher education?
7. What consequences have been suffered by students vis-à-vis the massification of higher education?
8. What are the general differences between studying at a university and at a secondary school?



Summary

The text in this section presented an overview of the changes that occurred in Czech higher education over the last 25 years. With regard to the fact that these have been quite significant changes, they have resulted in a range of problems with regard to the requirements placed on all participants. Dramatic quantitative developments and a lack of funds for tertiary education limit the possibilities for higher-education institutions to react. According to Šíma (2006), insufficient adaptation and the attitudes of some higher-education employees/academics are at fault, as they refuse to conform to contemporary higher education having a different function and still try to assert their attitudes and requirements, which were valid during the elite stage of university education. As we will see in the next chapter, the number of successful graduates, apart from the number of enrolled students, also depends on the determined requirements and demands. Adaptation to the requirements of the current needs of various student groups and a new definition of the functions and objectives of university education will be the starting point for successful university education in the universal stage of massification. Within the framework of the new definition of goals, one will have to count on the differences between some student groups and will have to introduce effective mechanisms for their support into the system. If not, the length of the students' stay in the system will be extended and will overburden the already underfunded system.





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2 Concept of Study Achievement and Prevention of Study Failure at Higher-Education Institutions in the Czech Republic



Objectives

After studying this chapter:

- you will be aware of the concept of study achievement and its conditions;
- you will know the results of two surveys in connection with the study problems of Czech university students and how they cope with them;
- you will have an overview of the current instruments for the prevention of study failure at Czech higher-education institutions;
- you will understand the differences between the terms 'tutoring', 'mentoring' and 'coaching'.



Time Demands

2 hours



Terms to Remember (Key Words)

- study achievement
- school efficacy
- general intelligence
- temperament
- approach to learning
- learning style
- self-regulation in learning
- primary prevention
- adaptation courses
- tutoring
- mentoring
- coaching
- self-regulation support
- development courses

2.1 The Concept of Study Achievement/Failure and the Factors Affecting It

Study achievement is one indicator of the efficacy of higher education, which often features in global assessments of the state of the educational system as



well as in documentation related to the funding of higher-education institutions. In the higher-education arena, study achievement expresses the fact that the student gradually passes subjects according to a determined timetable. This plan then becomes both a gauge of the study achievement of individual students and a criterion of the efficacy of the educational institution. However, it fails to express the characteristics of concrete and qualitative aspects, such as the requirements of individual subjects; the attitudes of students towards the educational institution, pedagogues and their studies; and the students' professional readiness and possibilities of future employment on the labour market.

The classical pedagogical-psychological concept of **school achievement** emphasises its importance with regard to the learner's self-concept (Vágnerová, 2005). Hrabal (1989) calls these competences **school efficacy** and they include common intellectual and partial specific abilities, skills, habits, values and social competences.

A traditionally recognised prerequisite for successful studies is a sufficient level of **general intelligence**, which is needed for abstract thinking; the ability to reflect on and assess one's own thinking (metacognition); the ability to learn new things with understanding; and the skill to apply acquired knowledge in new situations (Vágnerová, 2005).

Among non-intellectual characteristics, temperament, motivation, learning style and strategy, the ability to self-regulate and one's level of social intelligence play an important role in one's studies. **Temperament** as '*a disposition towards emotional reactions*' (Praško, 2003, p. 22) reflects an inherent personality component, which is expressed in four dimensions (Cloninger, 1993, cited according to Praško, 2003):

- **novelty seeking**; activation system launching cognitive and exploratory behaviour;
- **harm avoidance**; inhibitive system of behaviour, blocking contact with risks and unpleasantness and related to depression and anxiety;
- **reward dependence**; negative experience of separation and strengthening behaviour that has led to pleasant feelings; related to impulsive behaviour, tendency towards alcohol and drug additions, and anti-social and aggressive personality traits;
- **persistence**; system of persistence expressed by the ability to overcome momentary unpleasantness and to put off immediate satisfaction because of one's expectation of a more permanent reward in



the future. Mental resilience was proved in research studies as an important quality in connection with a student's success at a higher-education institution (e.g. Cassidy and Eachus, 2000).

Motivation is a personality characteristic with a fundamental effect on study efficacy. In this connection, Langer (2001) discerns the following student types (in Vašutová, 2002):

- oriented towards a scientific discipline (studies for the science);
- oriented towards a profession;
- fickle (studies for the present);
- false student (studies to belong socially);
- excels for status (studies for a future high social position);
- excels for competence (studies for expert knowledge).

Motivation determines how much effort the student puts into his/her studies and how much he/she is willing to overcome obstacles. We call this one's **approach to learning**. The approaches of a student who learns because he/she is interested in the field and of a student whose main motivation is to get a university degree will definitely be different. Students with a real interest in their field tend to have a **deep** approach to learning in order to thoroughly understand their subject matter. However, especially at the beginning of their studies, the majority of students have a tendency to apply a **surface** approach to learning, processing the subject matter mechanically and subsequently reproducing it. This approach not only stands in contradiction to the tasks and general principles of higher education, but also the volume of subject matter, and therefore is usually not effective. It is significantly more frequently adopted by first-year university students whose cognitive and metacognitive strategies have not yet been appropriately developed (Diseth and Martinsen, 2003). The Anglo-Saxon literature describes a third, **strategic** approach to learning. In the Czech literature it is usually referred to as 'utilitarian' (e.g. Mareš, 1998). The strategic approach to learning is connected with achieving the best possible assessment through adaptation to the requirements. Its primary motive is competing with others. A student applying this approach does not use distinctive learning strategies; instead, he/she uses whatever will lead to success (Entwistle, 1981).

Within the framework of motivational theory, **motivation towards school performance** has also been described. This concept distinguishes between individuals oriented towards school achievement and those oriented towards the avoidance of failure (Pavelková, 2002). According to the results of research



studies, motivation towards achievement correlates with the deep and strategic approaches to learning, whereas individuals oriented towards the avoidance of failure most frequently opt for a surface approach to learning (Diseth and Martinsen, 2003).

The variability in the approaches to one's studies, however, is not only a consequence of different motivation, but is also an expression of the way an individual receives, processes and uses information. These inter-individual differences are called **cognitive styles** and they include **learning styles**. These are individual idiosyncrasies expressed during learning activities. They are related to the student's personality, motivation and age. They are reflected primarily in learning strategies and tactical choices and have a significant effect on one's learning results. The following are important types of learning styles (Mareš, 1998):

- **sensing – intuitive**, the need for direct sensation – preference for fantasy;
- **active – reflective**, preferring an active method of obtaining knowledge – preference for reflection;
- **global – analytical**, a holistic approach to one's studies – an analytical approach.

In addition, Diseth and Martinsen (2003) distinguish an **assimilating style** which interprets new events within the framework of existing knowledge and prefers the rational and analytical processing of information and adherence to rules; an **exploring style** which uses strategies of looking for information through trial and error; and an **accommodating style** which combines the two aforementioned styles according to the requirements of one's environment.

The ability to **self-regulate** has already been mentioned in connection with one's level of general intelligence. In connection with effective studies, the following self-regulation activities are stated most frequently:

- **time-management**, the ability to use one's own time efficiently;
- **self-motivation**, the ability to give oneself short-term and long-term goals and to mobilise one's resources in order to achieve them;
- **volitional monitoring**, reflecting the process of achieving these goals and considering the possibility of using other methods.

According to Kuhl and Krasky (1996, cited according to Mareš, 1998), the development of self-regulated learning depends especially on the knowledge and skills acquired in two areas – **metacognitive** (the knowledge and skill to



influence one's cognition) and **metamotivational** (the knowledge and skill to control one's own motivation). In addition, these authors provide four criteria of self-regulatory maturity in a student:

- the skill to control one's own motivation
- the skill to control one's own attention
- the skill to control one's emotions
- the skill to cope with failure.

Social skills also belong to the successful functioning of the student. The student with an appropriate relationship towards him/herself also has a healthy relationship towards his/her environment. He/she can establish useful contacts with classmates and co-operate with them and support them. Communicative skills are also important, through which the student has no problem asking the pedagogue for a consultation, presenting the results of his/her work, discussing the currently taught subject matter at a seminar, or asking his/her classmates to borrow some study materials from them.

2.2 Obstacles to Successful Studies at Higher-Education Institutions

According to Kolibová (2001), school failure at higher-education institutions has both an internal aspect (see the skills and dispositions mentioned in the previous section) and an external aspect (conditions of the study environment). The latter is represented by the requirements of the study field, but also by the external support of pedagogues, counselling centres, social groups, and the academic environment. Beneš and Závada (2009) describe (un)successful university studies as a system with three variables: the number of enrolled students, the content and requirements of the study field, and the number of graduates. In their quantitatively focused study, these authors conclude that two of these variables can be established, whereas the third one is a dependent variable. In practice, this can be shown this way: If we increase the content-related requirements of the study field, we predetermine the level of study achievement and the number of graduates. Contrary to this, study achievement can be influenced by adapting the study-field content and requirements. However simplified these considerations may appear, they express the basic context and the need to adapt the requirements and other factors of the academic system to a diverse group of enrolled students, if this group is to be successful.



As the causality of study failure in university students has not been systematically monitored over the long term, this section is based on the results of two studies carried out within the framework of nationwide studies in 2009 and 2011 by university counselling centres.

A pilot survey was implemented in April 2009 at the Brno University of Technology (VUT) which mapped the basic obstacles during students' studies and the related consequences with regard to the work of counselling centres. The 2007 VUT annual report points out that there was a failure rate of 15%, with the figure being 19% among undergraduates. With the aim of understanding the issue of early study termination and of detecting the causes of possible study failure, students who had shown interest in the activities of the ICV VUT Counselling Centre in the previous two years or who had attended the promotional event for the Centre's services during enrolment were asked to complete an electronic questionnaire. It was completed by 157 students and produced the following results:

- Some 41% of the responding students assessed their studies as 'quite demanding'. If students failed an exam, 50% of them stated it was due to poor knowledge of the subject matter, 22% of them said they were highly nervous, and 17% of them were unable to express themselves exactly. Some 66% of the students said that they put off studying until the last possible moment and 63% of the students claimed that they usually prepared for an exam several days in advance, with the average preparation period being 3.5 days. Some 48% of the respondents battled a lower ability to concentrate on the subject matter, while 34% of them had problems remembering the subject matter. Some 32% of the students claimed that they were unwilling to invest much time into studying and that they had a low level of motivation with regard to achieving good exam results. Some 27% of the students said they planned their preparation period unrealistically, 26% of them claimed they concentrated excessively on details, and 7% of them said they prepared excessively.
- Their responses to being asked what would help them prepare for school and exams included that they would appreciate it if they could work with their memory better (62%), if they could plan their time better (57%), and if they could acquire effective learning techniques (60%). More than one third of the students would be helped by developing a higher level of motivation with regard to learning (34%) and by being able to work with their nervousness (36%) (Čihounková and Šustrová, 2009).



In the autumn of 2011, Juklová (2011) carried out a survey supported by a grant from the centralised development project of the Ministry of Education, Youth and Sports (MŠMT) whose goal was to map the frequency of incidence of various types of study obstacles and to analyse their circumstances and causes and the methods of how students cope with them. The research study also included an analysis of the attitudes and experiences of students with regard to university counselling in this area.

The investigated cohort contained 585 students from six universities in the Czech Republic which had been co-operating in the area of counselling for several years (the University of Economics, Prague; Charles University in Prague; the Brno University of Technology; Masaryk University; Mendel University in Brno; Palacký University in Olomouc; and the University of Hradec Králové). In each higher-education institution, around 100 students were surveyed and their subject fields were chosen in such a way as to represent the broadest possible spectrum of university study fields. In particular, the social sciences, law, the humanities, economic fields, technical fields, pedagogical fields, medicine and the natural sciences were represented quite equally. A selection from the results follows:

- A cluster analysis identified three types of **study motivation**: *students motivated to get the highest quality of theoretical and practical knowledge in the field as possible (71%), students motivated in particular by getting a university diploma (20%), and students with insufficient study motivation (9%)*.
- As regards the **type of study problems**, a factor analysis identified two factors: *comprehension* (understanding the subject matter taught; selecting what is important; feeling stressed during examinations; communicating with instructors; and expressing one's own opinions in front of a group of students) and *self-management* (creating a time plan; having the will to start studying and keep studying until the end; studying in such a way as to more effectively remember the subject matter). In terms of these two dimensions, the cohort of responding students was divided into four types: students with insufficient will and low self-management (21%), students with a low level of understanding of the subject matter (29%), students without significant problems (28%), and students with a high level of understanding of the subject matter (22%).



- The **circumstances** behind the study problems were categorised into the following: students *without significant negative influences* (43%), students *with the need to combine their studies with other activities* (studying at multiple higher-education institutions, participation in professional sports, work, etc. – 29%), and students *with significant personal problems* (family problems, mental problems – 28%). Students in the last category are usually the most frequent users of counselling services.
- The methods applied by students to resolve their problems also varied: by consulting with colleagues and other students (46%), by consulting with relatives (12%), with more serious types of problems consulted at an institution – a counselling centre or a study department, with instructors and sometimes resolved by interrupting or terminating one's studies (42%).
- Some 11% of the students approached by the research team used university counselling services. The response to the hypothetical question of whether they would use counselling services should they have study problems was that 40% said yes and 60% said no. However, 77% of the respondents said that they would welcome information on different ways to solve study problems. The students felt that they were insufficiently informed about the counselling services offered (in the last three years, information awareness has slightly improved) and they perceived the efficacy of this type of counselling as only moderately successful.

It appears from the results that the number of students at risk of study failure is quite high – more than one-quarter (29%) have problems understanding the subject matter and a similarly large share (22%) struggle with insufficient will and a low level of self-management. This provides room for higher-education counselling to be involved.

2.3 Study-Failure Prevention and Counselling-Support Possibilities at Higher-Education Institutions in the Czech Republic

Counselling started to develop at Czech higher-education institutions after 1990 in connection with the massification of higher education and efforts to expand educational access to various groups of the Czech population. It is usually



provided free of charge and has been financially supported by the Higher-Education Institution Development Fund and various other development funds of the MŠMT.

Counselling was legally supported in the Higher Education Act, no. 111/1998 Coll., which in Section 21 (1)(d) requires public higher-education institutions *'to provide applicants, students and other persons with information and counselling services relating to their studies as well as to professional opportunities for the graduates of degree programmes'*. Of course, the act does not stipulate any organisational standards or the forms and scope of such services as these are within the powers of each higher-education institution, which adapts them to its own needs, possibilities and target groups (Nováček, 2006).

Within the framework of higher education, counselling is currently applied in several areas:

- Psychological and psychosocial counselling focused on support in finding solutions to mental-health and relationship problems;
- Study counselling focused on study problems, especially in the area of study prerequisites and talent structure, and working with motivation, memory and understanding;
- Counselling for special-need students, providing services for them with the aim of enabling them access to education and providing them with the necessary compensation aids and measures;
- Career counselling, which includes diagnostics in connection with choosing one's future profession or study field or making decisions about one's further studies, contacting potential employers, and supporting the development of the desired skills needed for entering one's area of employment (writing one's CV and job applications, preparing for interviews with employers, communication skills, assessment centres, assertiveness, coaching for greater performance, stress management, etc.).

Work in the field of study counselling includes prevention, diagnostics and counselling intervention. Within the framework of primary prevention, which should help avert the origination of problems, it is advisable to make a blanket impact on first-year students. In this area, one can use a host of mechanisms in the environment of higher-education institutions.



Supporting study achievement does not have to be the exclusive domain of counselling centres, but it should be in the interest of employees at all university levels who can participate in the activities related to it. Even though it used to be part of informal instruction and guidance in earlier times, today, when the number of students has increased significantly and when pedagogues may lack the ability to deal with these issues, however, it is advisable to deal with them in a targeted way and to define them explicitly.

In order to make the students' transition to a higher-education institution easier, courses for students or support relationships with instructors or more experienced students are used. Among prevention courses, so-called **adaptation courses** have established themselves at many higher-education institutions and are a mandatory component of the field curriculum designed for whole study groups and collectives. Their aim is to introduce the instructors and the specifics of the subjects taught to the students in more detail and to introduce the students to each other. They usually take place outside of the faculty, which contributes to the creation of less formal collegial relationships.

Courses aimed at preventing study failure are usually an optional component of the activities organised by counselling centres. They usually include two features: more information about the functioning of school mechanisms, the methods of communication with faculty employees at various levels, and the possibilities with regard to using various sources of university support on the one hand, and on the other hand content focused on supporting learning, which contains an introduction to the possibilities of self-diagnostics and the training of study skills and competences leading to overcoming adaptation problems.

One of the support mechanisms based on relationships is **tutoring** based on the relationship between a student and an instructor. The aim of this type of support is to make students' adaptation to the university environment easier through regular contact with an instructor who offers possibilities, information and constructive feedback. The results of this type of support are usually the creation of a relationship with the study field, the student's internal motivation being positively influenced, and his/her competences in the area of communication in the academic environment being developed. This type of relationship is often developed between a student writing his/her final paper and his/her final-paper advisor or the head of the study field. However, regular contact and the active participation of the pedagogue are assumed.



Mentoring represents another support relationship based on a similar principle, this time, however, between a student (mentee) and an older colleague from practice (mentor) or, which is more frequent in the university environment, a more experienced colleague from a higher year (peer-mentor). Again, the voluntary principle applies here; however, as opposed to informal relationships between lower-year and higher-year students, one has to adhere to some principles in the case of official mentoring. The most important ones are the official nomination of the mentor based on clearly defined rules, professional training and supervision by an experienced expert. Mentoring should be of benefit to both participants: it should help the beginning student overcome barriers and increase his/her sense of certainty, competence and commitment, while the peer-mentor should gain experience in the area of leading people.

A specific form of support focused on the area of developing one's potential is **coaching**. This method, which was developed in professional sports and found a fixed place in the management sphere, is now expanding into fields such as pedagogy, social work and pastoral services. In pedagogy, it is considered beneficial and applicable especially as a method that stimulates pupils and students to:

- take responsibility for their own actions and decisions;
- increase their motivation;
- be creative;
- think more about their studies.

Coaching is implemented either in a group or individually under the leadership of a trained expert. In individual counselling, it is appreciated especially for its clear orientation on its objectives, and, compared to psychotherapy, for its lower time demands and thus lower costs.

Evoking a responsible and effective approach to learning, however, should be an organic component of instruction, within the framework of which instructors should create conditions for students to reflect on their own approaches to learning, to identify their strengths and weaknesses, and to look for opportunities for their further development. In this connection, it is recommended that higher-education pedagogues (Pol, 2008):

- create learning contracts with their students,
- appreciate and support their individuality,



- stimulate and monitor individual approaches to learning, reflect on individual learning styles, and assess and optimise them,
- support partner learning,
- submit problems close to real-life situations,
- support learning through practical activities and project work,
- help students see the meaning and objectives of their studies.

Should a study problem appear, it needs to be solved individually with the student. Any measure should be preceded by an analysis of study problems that should lead to an assessment of an assumed cause or a group of triggering phenomena and the student's resources with regard to overcoming them. The scope and style of counselling intervention are then based on these findings.



Practical Application

- Try to analyse the teaching style and methods of a selected higher-education pedagogue and compare his/her approach with the aforementioned recommendations (see Pol, 2008). Consider how and in what way the approach of this pedagogue suits/does not suit you.



Review Questions

1. What does the term *study achievement* in higher education express? How is its meaning different from school efficacy?
2. Why is a certain level of *general intelligence* important for study achievement?
3. Which non-intellectual aspects play an important role in study achievement?
4. Which self-regulation activities are important for study achievement?
5. How can a student's social skills manifest themselves in study achievement?
6. What types of students can be distinguished in terms of study motivation?
7. What types of students can be distinguished in terms of study problems?
8. What types of counselling are usually offered and implemented at higher-education institutions in the Czech Republic?
9. What does study counselling consist of?



10. For what purpose are so-called adaptation courses offered to students?
11. What do courses focused on preventing study failure focus on?
12. What is the difference between tutoring and mentoring and what do they have in common?
13. What can the effects of coaching be?





Summary

From the results of the presented surveys, several conclusions emerge not only about the characteristics of students and counselling, but also about the entire current educational system and students' attitudes towards it. More than half of our sample of students claim they have study problems, originating either from the difficulty understanding the subject matter or self-management. Roughly one-quarter of students also admit having more serious personal or family issues. These quite high numbers are indicative of the need for psychological counselling at higher-education institutions. If students get into trouble, they have a tendency to first try to deal with things autonomously, by contacting colleagues or relatives. Only when the continuation of their studies is threatened do they contact institutional bodies – study departments, counselling centres or instructors. Some 11% of students used the services of psychological counselling individually; however, more than 75% of the student cohort would appreciate more information and support in the area of solving study problems.



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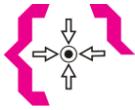
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3 Learning as Viewed from the Perspective of Several Theories



Objectives

After studying this chapter:

- you will have an overview of the key theories that try to explain learning in psychology;
- you will be able to explain and compare the contribution of individual theoretical schools and thus have a foundation for their application in practice.



Time Demands

2 hours



Terms to Remember (Key Words)

- behaviourism
- classical conditioning
- instrumental conditioning (law of effect)
- operant conditioning
- Skinner's Box
- social-cognitive theory
- observational learning
- triadic reciprocity causation model
- modelling
- information-processing theory
- metacognition
- self-regulation
- learning strategy
- constructivism
- exogenous constructivism
- endogenous constructivism
- dialectical constructivism
- genetic epistemology
- equilibration
- assimilation
- accommodation
- sensorimotor stage
- pre-operational stage
- concrete operation
- formal operation
- theory of cultural-historical psychology
- cognitive development
- social interaction
- internalisation
- mental operations
- mediation
- situational learning
- zone of proximal development

3.1 Behaviourism

Behaviourism started to develop at the beginning of the 20th century in the background of disputes between structuralists and functionalists. J. B. Watson (1878–1958), who thought schools focused on the human mind were unscientific, is considered its founder. If psychology was to become a scientific discipline, it had to be built similarly to the natural sciences, which investigate observable and measurable phenomena. Behaviour thus became the object of behaviourists' studies. Introspection is unreliable, conscious experience is



unobservable, and people who report about it cannot be trusted to do it exactly. Watson was therefore interested in Pavlov's model of conditioning, which became the starting point of the science of human behaviour. He was enchanted by the exactness of Pavlov's measurements of observable behaviour and believed that this model could be expanded to include various forms of learning and personality characteristics. For instance, a newborn expresses three types of emotions: love, fear and anger. With the help of Pavlov's conditioning, these emotions can be connected to stimuli and can create a complex adult life. Watson expressed his confidence in the power of conditioning in the following words:

'Give me a dozen healthy infants, well-formed, and my own specified world to bring them up in, and I'll guarantee to take any one at random and train him to become any type of specialist I might select – doctor, lawyer, artist, merchant or, yes, even beggar-man or thief, regardless of his talents, penchants, tendencies, abilities, vocations, and the race of his ancestors.' (Watson, 1926b, p. 10, cited according to Schunk, 2012)

Behaviourism is based on the idea of responding to a stimulus (S-R). This simple relationship can be used to describe the most complex learning situations. At first, behaviourists tried it on animals, but they proved its principles on observing humans as well. They are applied in situations in which an immediate response is required. It is practiced by multiple repetitions until it is learned (e.g. activities carried out by soldiers, fire-fighters or airplane pilots).

The most important researchers who influenced the use of behavioural principles in pedagogical practice are the authors of three conditioning theories: **I. P. Pavlov**, **E. L. Thorndike** and **B. F. Skinner**. We will now look at these theories in more detail.

I. P. Pavlov (1849–1936), author of the theory of **classical conditioning**, and his colleagues investigated the process of digestion in dogs. During their research, the scientists noticed changes in the timing and the amount of salivation in these animals.

Pavlov and his colleagues realised that if meat was placed close to or directly into the mouth of a hungry animal, it would start salivating. As the meat caused an automatic response, without previous training or conditioning, it was considered to be an *unconditioned stimulus (US)*. Similarly, as the salivating appeared automatically in the presence of food, also without the need for



training or experience, this response was considered an *unconditioned response (UR)*.

Whereas meat would cause salivation, the presence of another stimulus, e.g. ringing, would not cause it. Stimuli that did not have an impact on the response were called *neutral stimuli (NS)*. Pavlov's experiments showed that if an originally *neutral stimulus (NS)* was paired with an *unconditioned stimulus (US)*, it would become a *conditioned stimulus (CS)* and would gain the ability to cause the same response as an *unconditioned stimulus (US)*. This means that the ringing itself would in the end cause the dogs to salivate. Pavlov called this process **classical conditioning**.

In his experiments, Pavlov pointed out how learning is affected by involuntary reflexive behaviour, such as salivating. The importance of his work lies both in its methods and its results. His work shows how complicated the observations of the dogs and their responses to various stimuli were that he and his colleagues were able to make. His emphasis on observation, careful measurements and systematic exploration of a number of learning aspects was in his time an important component of the scientific study of learning. However, his conclusions are hard to apply to learning at school.

E. L. Thorndike (1874–1949), the author of the theory of **instrumental conditioning** (or **the law of effect**), and other U.S. colleagues were inspired by Pavlov's work. In his early work, Thorndike thought behaviour was a response to environmental stimuli (note the parallel with Pavlov). The opinion that stimuli could cause responses was the predecessor of the theory known as the S-R (stimulus-response) theory.

Similarly to many other early behaviourists, Thorndike connected behaviour with physiological reflexes. Some reflexes, such as the knee-jerk, happen without the participation of the brain. Scientists assumed that other behaviours were also determined by reflex, through stimuli present in the environment instead of through conscious or unconscious thinking.

In his many experiments, Thorndike worked with cats placed into a cage that were supposed to get food by finding their way out. He found that over time, by repeating the behaviour, the cats had learned to find their way out of the cage much faster. Contrary to that, without repetition, they behaved ineffectively. Based on these experiments, he defined **the law of effect**. According to this law, if behaviour is accompanied by a satisfactory change in



one's environment, the probability of it being repeated increases. On the other hand, if the behaviour is accompanied by an unsatisfactory change in one's environment, the change of it being repeated decreases. It was proven that the consequences of one's current behaviour play a key role in the determination of one's future behaviour.

B. F. Skinner (1904–1990) was the author of a third behavioural theory, called **operant conditioning**. Whereas Pavlov focused generally on behaviour which, according to him, was caused by specific stimuli, Skinner believed that this type of behaviour made up only a small part of all activities.

Skinner pointed out another type of behaviour which he called 'operant' as it took place (operated) in one's environment absent of unconditioned stimuli such as food. Skinner's work focused on the relationship between behaviour and its consequences. For instance, behaviour that is immediately followed by positive consequences is applied more frequently by an individual. Skinner called the use of positive and negative consequences due to behavioural change **operant conditioning**.

Skinner often worked by placing a subject into controlled conditions and observed the changes in its behaviour caused by systematic changes in the consequences of its behaviour. His contribution, similarly to Pavlov, lied not only in what he discovered, but also in the methods he applied.

Skinner is famous for the development and use of an apparatus called *Skinner's Box*. It was a very simple apparatus for the observation of animal behaviour, most frequently rats and pigeons. *Skinner's Box* looked like a glass terrarium for rats and contained a lever. The rats were able to press this lever. The rat could not see nor hear anything from outside of the box and all stimuli were controlled by the experimenter. In Skinner's earlier experiments, the cage had been configured in such a way that if the rat pressed the lever, it received a portion of food. After several random presses, the rat started pressing the lever frequently, each time getting a portion of food. The rat's behaviour was programmed to reinforce the lever pressing and to weaken other forms of behaviour (e.g. moving around the cage). At this moment, the researcher can do various things. The lever used until now as a food dispenser can be electronically set up to condition the portion of food using several lever presses or by some of the lever presses not leading to the dispensing a portion of food. In any case, the rat's behaviour will be automatically recorded. The possibility of exact scientific observation in a controlled environment was an important



advantage of *Skinner's Box*. His experiments can thus be repeated by anyone using the same apparatus.

Skinner's pioneering work with rats and pigeons defined many natural laws of behaviour that were supported by hundreds of studies carried out on humans and animals.

Behaviouristic principles based on learning by multiple repetitions are applied in many areas of human learning and due to their broad practical applicability have also found their place in the adages 'practice makes perfect' or 'repetition is the mother of learning'. However, one has to point out that memorising something does not necessarily mean internalising it and understanding it.

3.2 Social-Cognitive Learning Theory

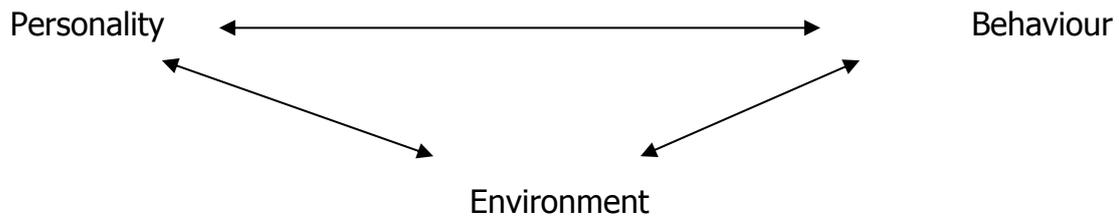
Another important theory explaining the principles of learning is the social-cognitive theory, which was born out of the investigations of **Albert Bandura** (b. 1925) into the development of aggressive behaviour in children (Bandura, 1976).

In contrast to behaviourism, this approach emphasises the importance of learning's cognitive aspects. Bandura posits a **theory of observational learning** – people can learn new things by observing others doing these things. It is not necessary for people to do these activities themselves while learning (i.e. reinforcement as defined by behavioural theories of learning is not necessary). By observing other people, we acquire knowledge, rules, skills, strategies, values and attitudes.

By observing the context of human behaviour and the environment, Bandura created the **triadic reciprocity causation model**. An individual's **behavior** is influenced by his/her **personality factors** and the **environment**. These three phenomena affect each other and condition (determine) each other. At various moments, one of the factors can increase its influence (e.g. when an individual does an activity for his/her pleasure, the personality influence is in the foreground; if the activity is chosen according to his/her family's wish, the influence of the environment is stronger).

Figure 1: **Model of Reciprocal Determinism according to Bandura** (freely according to Schunk, 2012)





In connection with reciprocal determinism, Bandura defines **four basic human capabilities** that are either cultivated or remain undeveloped in an individual's development:

- **symbolising capability** – processing and transforming a transient experience into internal models;
- **forethought capability** – anticipating the future consequences of one's own behaviour;
- **vicarious capability** – gaining experience through observing the behaviour of others and the consequences stemming from it. Adopting internal norms (standards), assessing the differences between norms and activities, and creating self-valuation reactions;
- **self-reflective capability** – assessing and changing one's thinking, including observing one's own ability to cope with various events.

Furthermore, Bandura emphasised the importance of the process of **modelling**. This process includes the behavioural, cognitive and affective changes occurring due to the observation of one or more models. We learn about the usefulness and appropriateness of behaviour from models. Originally, modelling was considered identical to imitation, but this term is much broader. It contains three functions: **reinforced response**, **origin of inhibition/lower inhibition** and **observational learning**.

In the case of **reinforced response**, social stimuli create motivational incentives for the observer (to model their behaviour on) 'to go with the flow', e.g. a group of people looking in one direction serves as a model for where it is interesting to look. In this connection, the **chameleon effect** was described – a situation in which modelling appears without conscious control. Chartrand and Bargh (1999) concluded that people unconsciously imitate and affect people in their social environment. Observing certain behaviours can trigger a tendency to behave similarly.



Inhibitions to behave according to models appear in situations in which the models are punished for their behaviour. Such inhibitions disappear when the models who behave in a forbidden way do not experience negative consequences or say that the consequences for the observers will be the same. Such information can also influence emotions (higher or lower anxiety) and motivation. Teachers thus can create or dampen pupils' inhibitions by their reactions to the behaviour of models.

Observational learning by modelling appears when the observers start showing new patterns of behaviour which, before their being exposed to the modelled behaviour, appeared with zero probability, even if they were highly motivated (Bandura, 1969). Observational learning contains several processes – attention, retention, production and motivation.

- **Attention** is attracted by distinctive traits, such as unusual size, shape, colour or sound. It is also influenced by the functional values of modelled activities (usefulness, success, and symbolic indicators of competence – title or position).
- The process of **retention** or remembering is another condition for observational learning. It requires cognitive organisation – repetition, coding, and transformation of modelled behaviour. Repetition plays a key role.
- In the case of observational learning, **production (initiation)** means the transition of visual and symbolic concepts into apparent behaviour. Problems with production occur, for instance, in a situation in which a child wants to tie his/her shoelaces, but cannot repeat it after having been shown. The same can apply in the school environment, for instance, to students with learning disorders who, because of their disorder, cannot do the things they are being shown. They should therefore be examined using a different method.
- The last component of observational learning is **motivation**. The consequences of modelled behaviour provide the observer with information about its functionality and appropriateness. They can motivate by expecting higher results and by increasing self-efficacy (see further in the text).



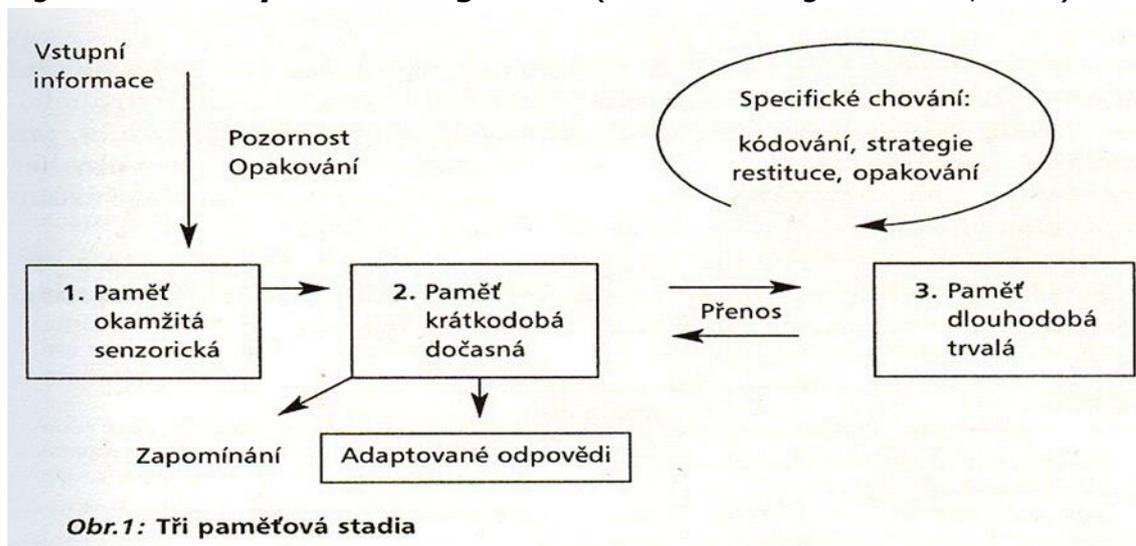
Based on his numerous research studies, Bandura lists the **factors that influence observational learning:**

1. an individual's developmental level,
2. the model's prestige and competence,
3. vicarious consequences,
4. expected results,
5. determined goals,
6. an individual's values,
7. self-efficacy – observers follow the model if they believe that they will be able to learn and behave according to him/her. Observing the same models affects the awareness of one's self-efficacy (if they can do it, so can I).

3.3 Information-Processing Theory

The **information-processing theory** views learning as information coding in one's long-term memory. Learners activate the necessary parts of their long-term memory and integrate their new knowledge into their existing knowledge in their working memory. Information that is organised and integrated is not only more easily integrated into one's working memory, but is also remembered for a longer period of time (see the figure below).

Figure 2: **Memory-functioning model** (cited according to Lairová, 1999)



Input information	Attention Repetition	Specific behaviour: coding, restitution strategy, repetition
1. Immediate sensory memory	2. Short-term temporary memory	Transfer 3. Long-term permanent memory

To manage one's own learning using this approach, one needs to know:

- the learning task (what should be learned when and how);
- one's own qualities (abilities, interests and attitudes);
- the strategies needed to achieve the task (monitoring the level of learning, making decisions about when to choose what approach, and assessing one's readiness).

In 1998 Winne and Hadwin developed a model of information processing that could be used in various areas of education. It is based on the assumption that learning is a complicated process in which the learner applies **metacognition** (awareness of one's cognition) and **self-regulation** (control of one's cognition). It contains several stages:

- **Definition of the task (what should be learned when, and how):** the learner processes information about the conditions characterising the task and tries to clearly define them. The authors distinguish two sources of information. *Task conditions* include information about the task that the individual receives from his/her external environment (e.g. the teacher's management of the task) and *cognitive conditions* are retrieved by the individual from his/her own long-term memory. The latter conditions contain information about how successful he/she was at previous tasks and *motivational variables* (e.g. the perceived level of one's own competence and attribution – attributing causes for one's success or failure).
- In the second stage, the individual makes decisions about particular **goals and the plans for achieving them**. Strategies are also defined.
- The third stage corresponds to the application of learning strategies and searching for suitable **tactics**.
- **The adaptation stage** includes changes to plans based on the evaluation of the success of the previous stages.

Information is processed and new information is created in each of the aforementioned stages.

Learning strategies are cognitive plans oriented towards carrying out a task successfully (Pressley et al., 1990). These strategies include:



- Activities such as **information selection and organisation, repetition of the subject matter that should be remembered, relating the new subject matter to information already stored in one's memory, and increasing the subject matter's meaningfulness.**
- Techniques **that create and maintain a positive learning climate** – e.g. ways to avoid exam-related anxiety, **to increase the feeling of one's self-efficacy, to appreciate the value of learning, and to develop expectations of positive results and positive attitudes.**
- Their use is part of self-regulated learning, as strategies give the learner better control over information processing.
- These strategies are accompanied by coding in all stages. The learner first **processes information about the task and transfers it from his/her sensory register to his/her working memory, then he/she activates related knowledge in his/her long-term memory, creates connections between new information and his/her existing knowledge, and integrates these into schemes in his/her long-term memory.**

Self-regulation learning methods are specific procedures or techniques contained in strategies that will be discussed in Chapter 4.

3.4 Constructivist Theories

Constructivism as a psychological and philosophical school posits that people **learn or achieve understanding through the formation of constructs** (Bruning et al., 2004, cited in Schunk, 2012).

Constructivism does not offer one view. Within the framework of this school, there are several concepts. **Exogenous (external) constructivism** assumes that knowledge is acquired by reconstructing the external world. This world influences constructs through our experience with it, through the influence of models and through instruction. Knowledge is exact to the degree that is reflected by external reality. **Endogenous (internal) constructivism** claims that knowledge originates from knowledge that has been acquired earlier, and not from interactions with one's environment. Knowledge does not mirror the external world, but is developed through cognitive abstraction. **Dialectical**



constructivism assumes that knowledge is derived from interactions between people and their environment. Constructions are neither constantly bound to the external world nor the result of what is in our minds. Instead, they reflect the results of mental discordances stemming from the interactions of an individual and his/her environment. This concept is related to many contemporary theories (e.g. Bandura's social-cognitive theory, cognitive constructivism, and Bruner's and Vygotsky's developmental theories).

Research on human cognitive development by Piaget and Vygotsky (and the theories which resulted from their research) fundamentally influenced the development of constructivism.

JEAN PIAGET (1896–1980) was a Swiss philosopher, biologist and developmental psychologist. He investigated children's thinking and became a pioneer of the constructivist theory of cognition. His **theory of cognitive development** (also called **genetic epistemology**) was not given much attention when it appeared, but it gradually became one of the fundamental theories in the area of human development. Even though it is today no longer the leading theory of cognitive development, it remains important and provides much inspiration for teaching and learning.

According to Piaget, the **process of cognition** depends on four factors: biological maturation, experience with one's physical environment, experience with one's social environment, and equilibration. The first three are a given, but their effect depends on the fourth. **Equilibration** refers to a biological incentive to maintain an optimal equilibrium (or adaptation) between one's cognitive structures and one's environment (Duncan, 1995, cited in Schunk, 2012). **Equilibration is a key source of motivation behind cognitive development.** It co-ordinates activities for the other three factors and harmonises internal mental schemata with external reality. When one is learning something new, discordance – **cognitive conflict** – sets in. An individual can use one of the **two processes of equilibration** – **assimilation** or **accommodation** – to resolve the conflict. **Assimilation** means adapting the external reality to one's existing cognitive structures. We adapt the nature of external reality to our cognitive schema so that it can be included in it. **Accommodation** means changing our internal schemata so that they are in accordance with our external reality. We change our opinions so that they make sense in our external reality. Assimilation and accommodation are complementary processes. Reality is assimilated and cognitive structures are accommodated.



Piaget's research resulted in his positing that there are four stages of cognitive development. He distinguished these stages according to the view of the world and the patterns of operations that children can use when discovering the world. The following rules apply to these stages:

- The stages are discontinuous, qualitatively different and separate. The transition from one stage to another is not due to gradual blending.
- The development of one's cognitive structures depends on one's previous development.
- Even though the order of the structures is constant, the age of individuals within a certain stage can differ between individuals. The stages should not be put into context with age.

1. **Sensorimotor stage (on average 0-2 years of age).** The child's activity represents attempts to understand the world. Understanding is rooted in one's present activity. This is a period of rapid change. Children actively equilibrate, even though they do so on a primitive level. Cognitive structures are constructed and changed, and motivation towards these activities is internal. At the end of the stage, children achieve a level at which they can advance to the next stage, the stage of symbolic thinking.
2. **Pre-operational stage (on average 2–7 years of age).** Children can imagine the future and reflect on the past, but with their perception and cognition they live mainly in the present. They are unable to think in more than one dimension at a time, and their thinking reflects irreversibility – once things are done, they cannot be changed. They have problems distinguishing between fantasy and reality. This is a stage of rapid speech development. Children are less egocentric; they are aware that others can have thoughts and feelings different from their own.
3. **Concrete operational stage (on average 7–11 years of age).** Children begin to show elements of abstract thinking, even though it is typically defined by property and activities (for instance, honesty means returning money to a person that has lost it). Children show less egocentrism and their speech becomes social. Reversibility in thinking appears in connection with classification and sorting – skills important for mathematics.
4. **Formal operational stage (on average 11 years of age to adulthood).** Thinking is no longer bound to tangible phenomena;



children are able to think hypothetically, in more dimensions, and in the abstract. Egocentrism appears in the adolescent's comparison of reality and his/her ideals – children often manifest idealistic thinking.

The critics of Piaget's work have expressed the following objections:

- children can perform activities earlier than Piaget expected;
- cognitive development does not take place equally in all domains;
- the same applies to adults – they can think about a certain area on several levels, e.g. baseball can mean throwing a ball and running (pre-operational), what to do in various situations (concrete operation), or why a curve-ball curves (abstract operation).

L. S. Vygotsky (1896–1934), a Soviet psychologist of Jewish origin, is the author of the theory of **cultural-historical psychology**, as a result of which he became the most recognised Soviet psychologist in the West. He was born in the territory of today's Belarus. At a congress in Leningrad in 1924, he criticised Pavlov's reflex theory and pointed out the connection between conditioned reflexes and human consciousness and behaviour. He believed that as opposed to animals that only react to their environments, people have a capacity to change this environment to suit their own purposes. This adaptive capacity distinguishes people from lower life-forms. His speech at the congress impressed Alexander Luria, who invited Vygotsky to join the prestigious Pedagogical Institute in Moscow. Vygotsky accepted and helped establish the Institute of Defectology.

For the rest of his life he wrote on the social mediation of learning and the role of the consciousness – often in co-operation with Luria and Leontiev. Vygotsky was a Marxist and his ideas suited the goals of the revolution – to change the culture into a socialist system.

The main principles of Vygotsky's theory include:

- **Social interactions are essential. Knowledge is constructed between two or more people.**
- **Self-regulation is developed through internalisation (the development of internal representations) and the activities and mental operations that appear in social interactions.**
- **Human development is done through the cultural mediation of instruments (language, symbols).**
- **The zone of proximal development (ZPD) represents the difference between what the child can do without help and**



what he/she can do with help. Interactions with adults and peers in the ZPD help cognitive development.

One of Vygotsky's main contributions to psychological thinking was his emphasis on **socially meaningful activities being an important influence on human consciousness**. Vygotsky viewed human thinking in a new light: he rejected introspection and behaviour being explained by previous activities. He was looking for something in between – the influence of the environment with regard to its effect on the consciousness. He emphasised the **interaction of interpersonal (social), cultural-historical and individual factors in human development**.

Interactions with others in one's environment stimulate developmental processes and quicken cognitive development. These are not interactions in the traditional sense, but situations in which children transform their experience based on their knowledge and properties and reorganise their mental structures. Learning and development cannot be decontextualized. The way pupils work with their worlds – people, objects and institutions – transforms their thinking. The meanings of concepts change in the process of their connection with the world.

Social activity is a phenomenon through which Vygotsky explains changes in one's consciousness. He thus created a psychological theory that unifies behaviour and the mind. The **social environment** influences cognition through instruments – cultural objects, language and social institutions. **Social interactions** help coordinate developmental influences.

Cognitive change originates in the use of cultural instruments, in social interaction, in internalisation, and in the mental transformation of these interactions (Bruning et al., 2004, cited according to Schunk, 2012).

Vygotsky was a proponent of dialectical constructivism, as it emphasises the interaction between people and their environment. The key mechanism in development and learning is **mediation**. All higher mental functions originate in one's social environment. The most influential process is one's **language**. Critical components of psychological development include managing the external process of transferring cultural development and thinking through symbols, such as language, counting and writing. As soon as this is achieved, the next step is to use these symbols to influence and self-regulate one's



thinking and behaviour. Self-regulation uses the important function of private language.

Later research showed that Vygotsky's statement on the origins of development in social interaction was too strong. Young children seem to be biologically predisposed to acquire concepts independent of their environment. Even though social learning influences the construction of knowledge, it seems exaggerated to claim that learning is derived from one's social environment.

Constructivism's critics most frequently object to the fact that constructivist assumptions cannot fully explain learning and understanding. Their most frequent assumptions include:

- 'Thinking lies in the intellect (memory, reason) rather than in the interaction between people and situations.'
- 'The processes of learning and thinking are relatively homogenous in all people, and some situations support a higher level of thinking more than others.'
- 'Thinking is based on the knowledge and skills developed in formally configured education more than on general conceptual competences originating in a unique experience and in one's inherent abilities.'

Constructivists reject these assumptions. They have evidence that **thinking occurs in situations and that cognition is constructed by individuals as a function of their experience in these situations** (Bredo, 1997, in Schunk, 2012). They emphasise the contribution of individuals themselves to their own learning. Social constructivists accentuate social interaction with regard to acquiring skills and knowledge.

Constructivism is not a theory, but an epistemology (theory of knowledge) or a philosophical explanation of the nature of learning. Constructivism does not postulate that there are learning principles that can be discovered and tested, but that learners create their own learning. They reject the existence of a scientific truth that can be discovered and verified. They claim that no statement should be viewed as true, but instead with reasonable doubt. **The world can be mentally constructed in diverse ways, and therefore no theory has a monopoly on truth.** There are many diversities and no version should be viewed as more right than any other. Instead of truths, constructivists view knowledge as being made up of working hypotheses. Knowledge is not deposited in a person, but is formed inside him/her. Human construction is the truth for one person (its author), but it does not have to be



the truth for anyone else. This is so because people create their knowledge on the basis of their own hypotheses and experience in situations that are different from each other. Therefore, each piece of knowledge is a subjective and personal creation of our cognition. **Learning takes place within a context** (Bredo, 2006, in Schunk, 2012).

The key assumption of constructivism is the thought that learners are active and develop their knowledge on their own. In order to understand the subject matter, they have to discover its basic rules.

Another constructivist assumption is that **teachers should not just pass subject matter on to a group of students, but should instead structure situations in such a way that the learners will have the possibility to actively manipulate the subject matter through social interactions.** These activities include the observation of phenomena, data collection, hypothesis creation and testing, and co-operation with others. Teachers of various subjects plan the curriculum together. Students are led towards self-regulation and are active in their learning through determining goals, monitoring and evaluating the learning process, and exceeding the basic requirements by investigating what they are interested in.

The basic constructivist premise is the claim that cognitive processes are situated in a physical and social context. **Situational learning** involves the **relationship between a person and a situation.** Cognitive processes therefore do not lie solely in one's mind. Hypotheses and knowledge are formed by people's interactions in situations. Research confirms the importance of situational learning as a means of understanding development in domains such as literacy, mathematics and the natural sciences. Situational learning is also positively related to motivation. **In the concept of constructivism, motivation** depends on cognitive activity in interaction with sociocultural and instructional factors that include language and forms of support (scaffolding).

Social interaction supports the cognitive development of individuals if it takes place in their zone of proximal development (ZPD). The ZPD represents the degree of difficulty and the amount of learning possible for a particular student under concrete instructional conditions. The ZPD has to be identified first for each individual. Essentially, it is a test of a pupil's developmental readiness or intellectual level in a specific area. It can be viewed as an alternative concept to intelligence. Working in the ZPD requires well-led co-operation between the learner and another person who presents new



knowledge to him/her. The functions of this assistance include the following: the provision of support; it should be an instrument; the broadening of the pupil's horizons; and enabling him/her to achieve goals that would otherwise not be achieved. Working in the ZPD should be used selectively only when necessary.

According to Vygotsky, school education is important not because it provides this assistance, but because it develops a higher awareness of one's self, one's language and one's place in the world.



Practical Application

Which theory has impressed you the most? Which one has appeared the most in your learning up to now? Which theory would you use as inspiration for your own performance as a teacher?



Review Questions

1. How do behaviourist theories view learning?
2. What is the essence of the theory of classical conditioning?
3. Who is the author of the law of effect? What set of laws does this theory describe?
4. How is B. F. Skinner's theory different from classical and instrumental conditioning and what is it called?
5. Describe the characteristics of Skinner's Box.
6. Explain the theory of observational learning.
7. Which four human capabilities are of key importance for learning according to Bandura?
8. What does Bandura's 'modelling' refer to? What functions does this process have?
9. Which seven factors influence the success and efficacy of observational learning?
10. What is the essence of 'the chameleon effect'?
11. How does the information-processing theory view learning?
12. Describe the processes of metacognition and self-regulation.
13. What are 'learning strategies' and what is their role in learning?
14. What is the essence of constructivism?



15. How are the individual constructivist concepts (exogenous, endogenous and dialectical constructivism) different?
16. Which two researchers fundamentally influenced the origin and development of constructivism? Briefly describe the essence of their main contributions.
17. What does 'equilibration' mean? Which two sub-processes does it involve?
18. How does Vygotsky view the origin of cognitive changes? What role does language play in these processes?
19. What does the 'process of mediation' mean?
20. What is the essence of situational learning?
21. What are the features of the zone of proximal development?



Summary

This chapter has presented four various views on human learning. **Behaviourist** theories explain learning without the inclusion of internal processes (thinking, imagination, feelings) – not because they don't exist, but because the origin of learning comes from observable events in one's environment. In contrast to behaviourism, the **social-cognitive theory** emphasises the importance of the cognitive aspects of learning. Bandura posits the **observational learning theory** – people can learn new things by observing others doing such activities. It is not necessary for the learners to do these activities themselves while they are learning (reinforcement in the sense of behavioural theories is not necessary). By observing other people, we acquire knowledge, rules, skills, strategies, values and attitudes. The **information-processing theory** considers learning as information coding in one's long-term memory. Learners activate the necessary components of their long-term memory and integrate new knowledge into the existing knowledge in their working memory. According to the authors of this theory, metacognition (awareness of one's cognition) and self-regulation (control of one's cognition) are important for learning to be effective. **Constructivism** emphasises the interaction of people and situations in the process of acquiring knowledge. This puts it in contradiction to the reinforcement theories that emphasise the influence of the environment on the individual as well as to the information-processing theory that places the dominating aspects of learning into one's mind without paying attention to the context in which learning takes place. On the other hand, with the social-cognitive theory, it shares the assumption that people, behaviour and the environment interact with each other.





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4 The Learning Environment in Relation to School Achievement or Failure

After studying this chapter:

- You will have an overview of how to practically apply the most important learning theories.



Time Demands

2 hours



Terms to Remember (Key Words)

- consequences
- reinforcement
- shaping
- reverse chaining
- discrimination
- generalisation
- self-regulation
- self-efficacy
- expected results
- meaningful learning
- recoding
- forgetting
- repetition
- mental mapping
- bicameral thinking
- assimilation
- accommodation
- equilibration
- cognitive conflict
- private language
- internalisation
- learning by discovery
- learning by asking questions

4.1 Implications Inspired by Behaviourism

Within the framework of the practical consequences of behaviourist theories, we will talk in more detail about the importance of the **consequences of behaviour** (including reinforcement and punishment) and we will learn about several other practical **principles derived from behavioural theories** (shaping, reverse chaining, extinction, discrimination, and generalisation).

The key principle of behaviourist theories is the thesis that **behaviour changes according to its immediate consequences**. Behaviour is reinforced by pleasant consequences and is diminished by unpleasant ones. This means that pleasant consequences increase the frequency with which the individual behaves in pleasant manner, whereas negative consequences



decrease this frequency. If a hungry rat receives food after pressing a lever, it will press it more frequently. If instead it gets an electric shock, it will press the lever less frequently or will stop pressing it altogether. Pleasant consequences are generally called **reinforcers**, while negative consequences are referred to as **punishments**.

Reinforcers

A reinforcer is any consequence that increases the frequency of a certain behaviour. One cannot claim that a particular consequence is a reinforcer until we have a proof that it reinforces the behaviour of an individual.

- *For instance, candy can generally be considered a reinforcer for young children, but after a hearty meal, children do not have to feel like candy and some children may not like candy at all. When teachers say: 'I reinforced his/her staying at his/her desk during maths using praise, but it didn't work', they use the term 'reinforced' wrongly, as they do not have proof that praise was a real reinforcer for the student in question.*

No reward can be considered a reinforcer under all conditions.

Reinforcer types

There are two broad categories of reinforcers: primary and secondary. **Primary reinforcers** satisfy basic human needs, for instance food, water, safety, warmth and sex. **Secondary reinforcers** are reinforcers that grow in value in connection with primary reinforcers or other tried-and-tested secondary reinforcers.

- *For instance, money has no value for a young child until he/she learns that one can buy things with it that themselves represent primary or secondary reinforcers. Grades are of low value for students if their parents are not interested in them and do not evaluate them. Parental appreciation is valuable because it is connected with love, warmth, safety and other reinforcers.*
- *Money and grades are examples of secondary reinforcers, as they are not valuable on their own, but are associated with primary reinforcers or tried-and-tested secondary reinforcers.*

There are three basic categories of secondary reinforcers:

- **social reinforcers** (appreciation, smile, hug, attention)
- **activity reinforcers** (access to toys, games and entertainment activities)



- **symbolic reinforcers** (money, grades, stars, or points that can be exchanged for other reinforcers)

Reinforcers can also be divided into **positive** and **negative** examples. Reinforcers used in school are usually things given to students. They are called **positive reinforcers** and include, for instance, awards, grades and stars.

Another method of behavioural reinforcement is to give a reprieve from some unpleasant activity as a consequence of good behaviour. For instance, a teacher can give students a reprieve from homework if they work diligently during the lesson. If homework is perceived as unpleasant, getting a reprieve from it can be reinforcing. Reinforcers that represent a reprieve from unpleasant situations are called **negative reinforcers**.

Another possible application of behaviourist principles is **Premack's principle**, which states that a high-frequency activity can be used to reinforce participation in a low-frequency activity.

- *For instance, the teacher says: 'As soon as you finish your work, you can go out' or 'Put your drawings aside and I will read you a story'. Teachers can switch between high-frequency activities and low-frequency activities and condition participation in the former by the successful completion of the latter. For example, it can be a good idea to teach music education (which one assumes to be highly preferred by pupils) instead of some difficult subject. The pupils are told that if they avoid working on a difficult task, they are using up part of their music-education time.*

Punishments

Consequences that do not reinforce behaviour are called **punishments**. Note the difference between negative reinforcement (a desirable behaviour is reinforced by getting a reprieve from an unpleasant activity) and punishment (which focuses on the reduction of behaviour by using undesirable consequences). The definition of punishment contains the same conditions as reinforcement: if an obviously unpleasant consequence does not result in the reduced frequency of an unpleasant behaviour, it cannot be considered punishment.

- *For instance, students can like being sent to the principal's office or out of the classroom, because they get a reprieve from what they consider an unpleasant situation. Other students can also be glad if they are told*



off, because they get the teacher's attention and maybe even improve their status among their peers.

Similarly to reinforcers, the effectiveness of punishment cannot be assumed but must be demonstrated.

Punishment has two primary forms. The **first form of punishment** represents the **use of unpleasant consequences** or aversive stimuli.

- *For example, a student should write 'I will not speak during the lesson' a hundred times or he/she is told off or slapped.*

The other form of punishment is the **removal of reinforcers**.

- *For example, a student has to give up his/her freedom of choice, has to stand in the corridor, or loses a privilege.*

The careful use of punishment can improve the behaviour of pupils.

- *In one study (Hall et al., 1971, cited according to Schunk, 2012), for instance, a simple procedure for punishment is described in order to reduce the time during which ten emotionally disturbed pupils spend time away from their desks without permission. The researchers instructed the teacher to bring a board with the names of these pupils. Every time the pupils left their desks without permission, the teacher wrote down a symbol next to their name that meant five minutes of detention. The results showed that this programme was successful and reduced the pupils' undesirable behaviour. However, when the programme eventually ended, it was shown that the pupils' behaviour worsened again.*

The question of how to punish is a source of controversy not only among teachers, but also among behaviourists. Some claim that the effects of punishment are transient, that punishment causes aggression and leads to the avoidance of environments in which it is used. Others have submitted evidence against such claims. However, even behaviourists that generally support the use of punishment agree that:

- punishment should only be used when reinforcement has proven ineffective;
- even in such a case, the punishment should take the mildest possible form;



- punishment should always be used as part of a thoughtful plan, never without deliberation or as a result of frustration;
- physical punishment is usually rejected for ethical as well as expert reasons.

Immediate consequences

Behaviourists found that timely behavioural consequences affected behaviour much more than delayed consequences.

- *For example, if we delayed the dose of food for the rat that had pressed the lever in Skinner's Box, the creation of a connection between pressing the lever and receiving food would take longer, as before the food arrived, the rat could be doing something else than pressing the lever.*

Weaker reinforcement given immediately generally has a greater effect than stronger reinforcement given later. This finding is very important with regard to understanding human behaviour.

- *For instance, it explains why it is so hard for people to give up smoking or overeating. Even though the benefits of quitting smoking or losing weight are significant, small but immediate reinforcement such as 'just one cigarette' or 'just one cream puff' often overrides the behavioural effect of strong but delayed reinforcement.*

This principle is also very important in school. Immediate praise for work well done represents stronger reinforcement, especially for younger pupils, than a grade given much later. Similarly, immediate feedback can be more effective than delayed feedback. There are two reasons for this – it clarifies the connection between a certain behaviour and its consequences and further increases the informational value of the feedback.

Shaping

Shaping is a technique that can increase motivation. It involves dividing a task into small steps and continually providing feedback. The majority of pupils already need reinforcement during the learning process. If a teacher leads his/her pupils towards a goal by encouraging them step by step, then he/she is using a technique called **shaping**.

- *Should a kindergarten teacher put off reinforcement until the child learns to say the entire alphabet? Certainly not. It will be better if she praises the child for each letter, later for several letters at once, and in the end for learning all the letters of the alphabet.*



- *If we are to teach pupils how to tie their shoelaces, we will not do it by just showing them how and then putting off reinforcement until the job is done; we will provide reinforcement for their making a knot, then a loop, etc., until they are able to carry out the rest of the task.*

Shaping is used most effectively if pupils move quickly from success to success. This requires the task to be divided into small steps. This process is called **chaining**.

Reverse chaining

Another interesting technique that can be applied in education is **reverse chaining**. As the name suggests, this is a process during which a skill is taught in reverse – from a complete result to its individual parts.

- *For instance, when teaching how to write articles (essays), we first provide the students with an article in which only the last sentence is missing. The final result of this exercise would be a complete article. The advantage of this process is that students are reinforced sooner. They will make the journey to reinforcement much faster this way.*

Extinction

It has already been hinted at that after behavioural consequences are removed, behaviour that is either reinforced or punished ceases. The behaviour in question is less frequent and in the end stops completely. This is a process of extinction of **previously learned behaviour**. This is quite a subtle process. After the removal of reinforcers, an individual usually increases the frequency of the behaviour for a while.

- *For instance, when we come to a door that is usually unlocked and find out that it cannot be opened, we often try to open it by force again and again, turn the handle, or even kick the door. Over time, the frequency of our movement towards the door lowers until it stops completely.*

Discrimination (perception and response to various stimuli)

Discrimination means using hints, signals and information to forecast under what conditions the desirable behaviour will probably be reinforced.

- *When is the most suitable time to ask a boss for a pay rise? When his company is prospering, the boss looks satisfied and you have just succeeded at something? Or when the boss is notified about a poor economic result, is in a bad mood and you have just messed something up? Of course, you will more probably get the pay rise in the first situation.*



For pupils to learn to discriminate, **they must get feedback on the correctness or incorrectness of their responses**. Scientific studies have proven that pupils need to know when their responses are incorrect more than when they are correct. Praising students for correct responses without feedback about mistakes is therefore not a good strategy for providing feedback.

Learning is primarily about managing more and more complicated discrimination.

- *For instance, all letters, numbers, words and mathematical symbols are discriminative stimuli. A young child learns to distinguish between 'a' and 'b', an older pupil learns to discriminate between 'active' and 'alert', and student-teachers learn to discriminate between 'reinforcers' and 'punishments'.*

Effective use of discriminative stimuli is very important with regard to leading a class. Theoretically, the teacher could wait until a pupil does not do a desired thing and then reinforce it, but this would be a very ineffective method of instruction. Therefore, teachers should instead provide their pupils with information about 'what will be rewarded' (with praise, grades or points). With this information, the teacher can avoid a situation in which pupils spend their time doing activities incorrectly. When pupils know that what they are doing will pay off in the end, they usually try harder.

Generalisation

The principle of generalisation focuses on transferring behaviour learned under certain conditions to other situations. One should not assume in advance that pupils are able to automatically transfer their knowledge and skills to other conditions. Instead, they learn to discriminate.

- *Young children especially distinguish between what can and cannot be done at their kindergarten and what is permitted and forbidden at home. Their behaviour is a bit different in both environments.*

In order to achieve generalisation in learning, one needs to actively focus on it.

- *For instance, students will need to learn to understand the symbolism of many authors before they acquire the general ability to interpret it with all authors.*



If generalisation from one area of learning to another is not successful, pupils may not have noticed the signals about the similarity between these two areas. However, another reason may be the fact that they are not motivated to respond.

4.2 Implications Inspired by the Social-Cognitive Theory

The principle of observational learning, which claims that by observing others we can learn new things and acquire knowledge, rules, skills, strategies, values and attitudes, can be used in the areas of learning cognitive, motor and social skills, learning self-regulation, in topics about violence (e.g. in films), in moral development, and in education, health and social values.

Teachers themselves can become models or through their reactions can eliminate other models or create inhibitions in pupils to follow them. It has been found that observers follow a model if they believe that they are able to learn and behave based on the model.

- *It follows from this that the most effective models are pupils' peers with comparable properties and abilities. If they become a model, a good awareness of their self-efficacy occurs in the observing individuals ('if they can do it, so can I').*

Another specific feature of the social-cognitive theory is the importance it ascribes to **self-regulatory functions**. People do not behave in a certain manner to comply with the preferences of others. The majority of their behaviour is motivated and regulated by their own internal standards and self-evaluated reactions to their own behaviour. **We behave based on a belief in our abilities and the expected results of our behaviour.**

According to Bandura, the key role that affects our behaviour in learning is played by **self-efficacy**. He found that confidence in one's own ability to learn or to do activities on a certain level has a strong relation to motivation and results. Self-efficacy can influence the choice of activities:

- *Students with low self-efficacy may avoid tasks, while those with high self-efficacy prepare eagerly.*
- *Students with high self-efficacy usually make more effort and persist longer when faced with problems.*



People gain self-efficacy in various areas through their own activity, observing models, social stimuli, and physical responses. According to Schunk (2012), current performance is the most valid information about one's self-efficacy. Self-efficacy usually increases with success and decreases with failure (permanent, not occasional). **Self-efficacy is therefore an important agent that influences motivation and performance.**

Self-valuation is essentially the comparison of one's current performance with the desired goal. It depends on the standard used, the goal's properties, the importance of its achievement, and on its attributions. **Self-valuation standards** can be **absolute** or **normative**.

- **Absolute standards** are determined externally. Grading at school is usually based on them.
- **Normative standards** are based on the performance of others.

Standards provide information and motivation. Comparing one's performance with the established standards hints at one's progress towards the desired goal.

- *Students who read three pages in 10 minutes are aware of the fact that they are halfway done in less than half the time. Their confidence in the fact that they are making progress increases their feeling of self-efficacy, which maintains their motivation to achieve the desired goal.*
- *It is best to compare ourselves with people with similar abilities, as they show us that we can also succeed.*

An important means of establishing self-valuation standards is model observation. It affects one's feeling of self-efficacy and results in behaviour which leads towards the achievement of the desired goal.

The properties of the goal are especially important in the fulfilment of long-term goals. These include **specificity, closeness** and **difficulty**.

- *Teachers can help pupils who doubt they can write a good term paper, for instance, by dividing the task into short-term goals (choosing the topic, carrying out a survey of the environment, writing a draft). Pupils have a tendency to believe that they are more able to complete partial tasks, and by actually completing them they will increase their feeling of self-efficacy and be able to complete the entire paper.*



- *It has been found that people focus on the evaluation of their learning progress when it relates to goals they value.*

Attributions (perceived causes of results) and the evaluation of one's progress can be influenced by one's feeling of self-efficacy, motivation, performance and emotional reactions (Schunk, 2001, 2008). It is essentially about what causes we attribute our success or failure to.

- *Students who believe that they are not making any progress towards their goals can attribute their performance to low abilities that negatively influence their expectations and behaviour.*
- *Those who attribute their poor progress to insufficient effort or unsuitable learning strategies can believe that progress is possible if they work more diligently or change their strategy.*
- *With regard to emotional reactions, people are prouder of successes they attribute to their abilities or efforts compared to those they attribute to external influences. On the other hand, they are more self-critical in cases where they fail for personal reasons compared to circumstances which they cannot control.*

Attributional feedback can reinforce the self-regulation of learning.

- *If a student learns that he/she can achieve a better result by working more diligently, he/she gets motivated to do so, because the feedback tells him/her he/she is capable.*

Providing feedback on his/her previous success supports the student's perception of his/her progress, maintains his/her motivation, and increases his/her feeling of achievement with regard to further learning (Schunk, 1982a).

The timing of attributional feedback can also be important. Initial successes are an important stimulus for the creation of attributions for one's own abilities.

- *Feedback connecting previous success with one's abilities increases one's awareness of self-efficacy in learning – 'That's correct, they're good at it.'*



4.3 Implications Inspired by the Information-Processing Theory

The information-processing theory offers many learning strategies. We can distinguish between them according to various criteria. The following table summarises the strategies according to the function they fulfil in learning. We will describe the individual items later in the text.

Table 1: **Learning Strategies and Their Categories** (freely according to Schunk, 2012)

Learning-Method Category	Types
1. Repetition of the subject matter, practice	Verbatim repeating of information, Underlining/highlighting, Gathering (summarising)
2. Processing of the subject matter	Using imagery, Using mnemonic aids: acronyms, sentences, stories, peg-words, the method of loci, key words, Asking oneself questions, Taking notes
3. Organisation of the subject matter	Using mnemonic aids, Gathering into groups, Outlining, Mapping
4. Monitoring one's understanding	Asking oneself questions, Repeated reading, Looking for consistencies, Paraphrasing
5. Affective strategy	Coping with anxiety, Maintaining a positive belief: in one's self-efficacy, expected results and attitudes, Creating a positive environment, Managing one's time

1. Repetition of the subject matter

There are various forms of repetition: verbatim repeating of information, underlining, and gathering.



Verbatim repeating of information is an effective method for tasks that require simple memorisation. However, one should keep in mind that this method of repetition does not contribute to the creation of a connection with what has already been learned and it does not organise this information into schemes in one's long-term memory. Long-term memory has a problem retaining information saved in such a way, and recalling it after some time is usually difficult. Repetition can be useful for learning that includes more than just verbatim repeating of information.

One useful addition is, for instance, **underlining/highlighting**. However, one should keep in mind that the information we underline/highlight should represent points that correspond the most with our learning-related goals.

Gathering (summarising) is another method that can help repeat the subject matter. It is based on students expressing the main theses in their own words (orally or in writing). Similarly to underlining, however, it loses its effectiveness as the amount of information becomes greater. It is the limiting of the length of the overview that forces students to identify the main theses. For instance, summarising is part of Palincsar and Brown's (1984) approach called **reciprocal teaching**, in which it is used to increase text comprehension.

- *Reciprocal teaching is based on Vygotsky's (1978) zone of proximal development or the amount of subject matter a student can learn under suitable learning conditions. The teacher instructs the pupils by doing the activity him/herself, which is followed by the pupils joining him/her in doing it. Through gradual development, the pupils acquire more responsibility and learn from each other. Palincsar and Brown taught children to summarise, ask each other questions, clarify, and make predictions. On an ongoing basis, they were creating a summary of what they had read, were asking questions that a teacher would usually ask, were clarifying incomprehensible parts of the text, and were predicting what would happen next in the text. These processes are not unique to text comprehension and can be successfully applied as problem-solving methods across different fields (e.g. the natural sciences, mathematics, and the social sciences).*

2. Processing of the subject matter contains procedures such as using imagery and mnemonic aids (acronyms, sentences, stories, peg-words, the method of loci, and key words), asking questions, and taking notes.



Imagery provides a mental picture. A person can learn what a plant looks like by describing its parts word for word or by looking at a picture of it and making a mental picture that is then connected with a definition.

Mnemonic aids are a popular method of processing subject matter. They create a meaning by relating to something we already know. They can take various forms:

Acronyms combine the first letters of the information that should be remembered into a meaningful word. *For instance, HOMES is an acronym for the five Great Lakes (Huron, Ontario, Michigan, Erie and Superior). Acronyms created by the students themselves are as effective as acronyms created by someone else.*

- **Mnemonic aids in the form of sentences** use the first letters of the information to be remembered as the first letters of the words in the sentence. *For instance, the sentence 'Every Body Goes Down in An Elevator' helps one remember the order of guitar strings from high to low (E-B-G-D-A-E).*

Another possibility is to arrange the information to be learned into a paragraph or a story. This is suitable for long lists of items to be remembered (e.g. the capitals of U.S. states).

- **Using numerical shapes** is an easy technique for **remembering numbers**. It uses the shapes of numbers that remind us of some particular picture. We create one unchangeable picture for each number from zero to ten. For instance, zero – egg, one – candle, two – swan, three – handcuffs, four – sailboat, five – hand with five fingers, six – elephant's trunk, seven – axe, eight – snowman, nine – snake, ten – bat and ball. To remember a number, we create a **story from the pictures** in which we connect one picture to another. The funnier or more interesting the story, the better.

For instance, we need to remember the number 2684 as our PIN. We can imagine a swan (the picture for number 2) punching the PIN code into the phone with its bill. It tries to call its friend, the elephant (the picture for number 6), to invite it over for Christmas. To its surprise, the phone is answered by the snowman (the picture for number 8), who says that the elephant has left for Africa for Christmas on a sailboat (the picture for number 4) because of the frost.

- **The method of loci** (also called the **memory palace** or **mind palace**) consists of two phases. The first one consists of creating the idea of a journey in a known environment, such as at home in one's own room. In the second phase one goes through this room in one's mind and stops at



each important object. Each item from the list to be remembered should be 'paired' with one such object in the room.

For instance, now we need to remember our shopping list: butter, milk, apples and bread. Assuming there is a table, a lamp, a TV set and a radiator in the room, we can imagine butter on the table, a lamp the colour of milk, apples on top of the TV set, and bread drying under the radiator. To recall the shopping list, one needs to go through the room in one's mind and imagine the individual objects.

Mnemonic aids are based on the principles of rehearsal and connecting new information with existing knowledge. They are the most popular among students.

Asking oneself questions requires stopping periodically while reading and asking oneself questions.

- *Students can ask questions like the following: How does this information relate to what the author discussed in the previous section? (which directs them towards higher educational goals and synthesis); How can this idea be applied in the organisation of the school? (application).*

Research has shown that asking oneself questions does not always lead to improved comprehension. It is important that it relates to a higher level of knowledge, not to factual knowledge. In addition, it is the most useful with older pupils, if it applies to longer passages and not shorter texts. In younger pupils, it is as useful as repeated reading or an outline, which researchers explain by pointing out the children's limited ability to ask effective questions.

Taking notes is another processing technique that requires the learner to construct meaningful paraphrases of the most important theses from the text. It is similar to summarising with the exception that it is independent of the immediate availability of the information. When taking notes, students can combine a new piece of text information with other pieces of information in a personally meaningful way. For notes to be effective, they cannot be a verbatim transcription of a text. A verbatim transcription of a text is a form of repetition and can contribute to easier recall, but it does not constitute processing! The intention of note-taking is to elaborate on the information (integration and application). Students need to be instructed on how to take good, effective notes. For this method to be effective, it is further required that the content of the notes be highly relevant to one's educational goals.

3. The techniques for organising subject matter include the use of mnemonic aids, gathering into groups, outlining, and mapping. Organisation of



the subject matter by the pupils themselves provides effective recall assistance: the pupils first recall the organisational scheme and then the partial knowledge (Weinstein and Mayer, 1986). It is especially useful when the information is highly complex.

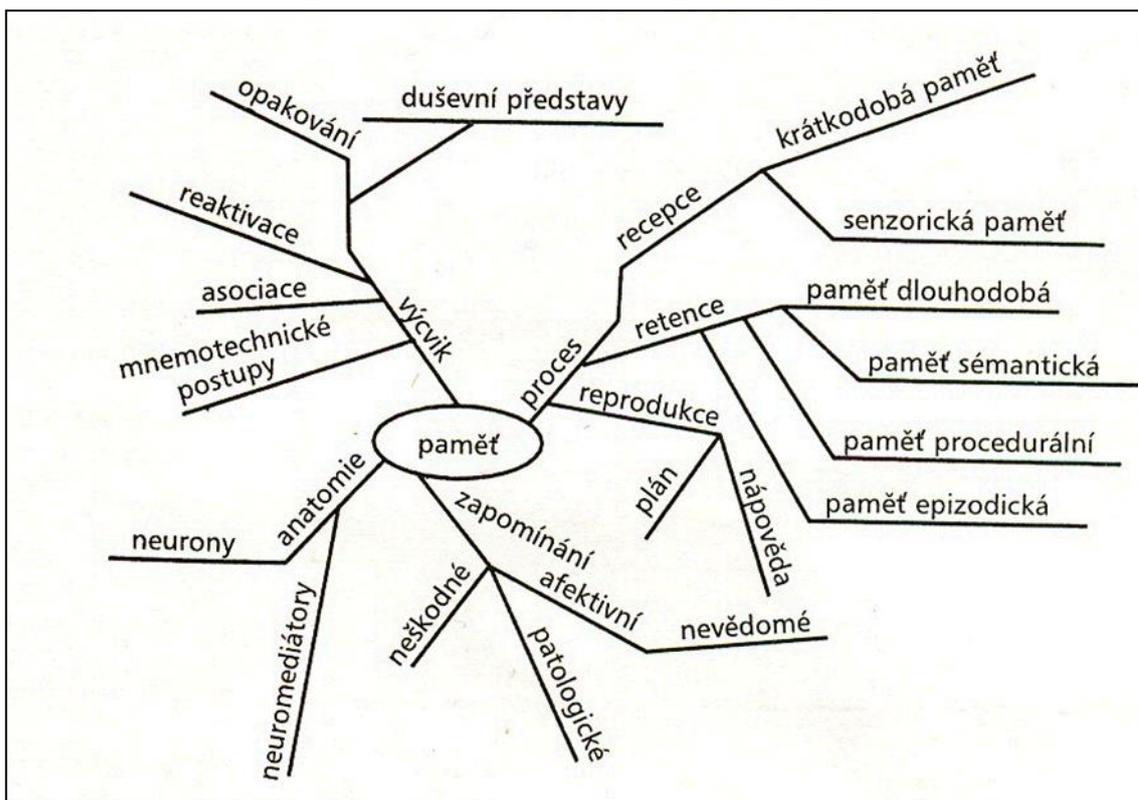
- **Outlining** requires one to determine a heading. Again, this is a technique that improves comprehension, but it requires skill.
One of the ways to teach pupils to do outlining is to use a text with a heading that we remove together with words printed in bold or in italics. Another way is to let the pupils identify the key sentences or points related to them. One needs to keep in mind that outlining makes no sense if the pupil does not understand the entire process.
- **Mapping** represents another organisational technique that increases the student's awareness of the text structure. It comprises identifying important ideas and specifying their mutual relationships. Concepts or main ideas are identified, categorised and related to others. The exactness of the map differs based on its content and the type of relationships. When helping students create maps, Schunk (2012) recommends the following steps:
 1. Discuss the mutual relationships of various sentences in the paragraph using the following categories: main idea, example, comparison/contrast, time connection, and conclusion.
 2. Model the application of these categories on an example.
 3. Ensure assisted practicing in the categorisation of sentences and in the substantiation of the students' choice.
 4. Allow students to work independently on the paragraphs. As soon as they acquire the basic skills, one can use a more complex text, even with new categories.

The map is conceptually akin to a propositional network, as mapping contains the creation of a hierarchy with the main ideas or superior terms placed at the top, followed by supportive points, examples and inferior terms.

An example of a map is provided in the following figure.

Figure 3: **Example of a Mental Map** (Gamon and Bragdon, 2001)





Research has shown different levels of effectiveness in the use of mapping as a means of improving text comprehension (Snowman, 1986, in Schunk, 2012). The ability to discern some relationships can be learned more easily (e.g. main idea – example) than others (e.g. cause – effect). Pupils can also have problems expressing the relationships between individual sections or paragraphs. Therefore, it is advisable to first guide pupils toward discerning relationships within the framework of individual sections or paragraphs, and then connect these maps. Mapping is an important aid for pupils who are having problems integrating ideas.

4. Monitoring one's understanding helps students determine whether they are applying declarative and procedural findings to the subject matter correctly and whether they understand the subject matter, decide whether their strategy is effective or whether another one would be better, and makes clear why (and how) the applied strategy will contribute to more effective learning. The skill of monitoring one's understanding is a central component of similar programmes. Asking oneself questions, repeated reading, looking for consistencies and paraphrasing are all processes that can be used in monitoring. According to research results (Green and Azevedo, 2009, in Schunk, 2012), these activities significantly increase one's understanding of complex scientific topics.



- **Asking oneself questions** stems from experience with some study texts that include questions related to the text. If the student uses these questions and tries to find an answer to them, then he/she asks him/herself questions. It is up to the student to ask him/herself questions about texts that do not include questions. In such cases, he/she should regularly stop reading and ask him/herself questions (e.g. who, what, when, where, why and how).
- **Repeated reading** is connected with asking oneself questions. If the student cannot answer the text-related questions or has problems with understanding, he/she needs to read the text passage again.
- **Looking for consistencies** is a process through which we consider whether the text is internally consistent, i.e. whether some parts of the text do not contradict each other and whether the conclusions are based on information discussed in the text. Having the feeling that the text is textually inconsistent is a stimulus for reading it again and for considering whether it is because the author of the text really is inconsistent or whether the reader did not manage to perceive the content correctly.
- Students who periodically stop while reading and **paraphrase** the text verify the degree of their understanding. The fact that they are able to paraphrase the text they are reading is an indicator that it does not have to be read again.
- Schunk (2012) says Meichenbaum's **self-instructional approach** (1986) is a useful method for the instruction of monitoring one's understanding. It is about cognitive modelling that connects statements to control one's understanding and to correct the procedure, if necessary. If we teach students to monitor their understanding, we can tell them the following statements (Meichenbaum and Asarnow, 1979, cited according to Schunk, 2012):

'Before I start reading a story and also while I'm reading it, I should keep three big things in mind. The first one is to ask myself what the main idea of the story is. What is the story about? The second one is to find the important details which appear in the story. The order of events or their sequence is of utmost importance. The third one is to determine how the characters feel and why. So, find the main idea, follow the sequences, and determine how the characters feel and why.'

Pupils learn the statements by heart and gradually internalise them until they become part of them without having to be expressed aloud.



Allowing the pupils to whisper these statements to themselves is a suitable connecting link.

5. Affective strategies are procedures that create a pleasant psychological climate for learning (Weinstein and Mayer, 1986, cited according to Schunk, 2012). They help the individual cope with anxiety, develop positive expectations (feeling of self-efficacy, expectation of results, and attitudes), determine goals, define a regular time and place for studying, and minimise disruptive elements (by introducing rules such as no phone calls or watching TV). They further help the learner focus on important aspects, use time effectively, and minimise anxiety.

- **Internal speech (talking to oneself)** helps one stay focused on a task.

At the beginning of working on a task, the student can think: 'This will be difficult. I have to pay attention to what the teacher is saying.' When the student notices that his/her attention level is dropping during the task, he/she can think: 'Stop thinking about ... It is necessary to concentrate on what the teacher is saying.'

- **Determining goals** is an effective strategy for time management. Students can regulate their studies by determining their overall goals, dividing them into shorter-term goals, and periodically evaluating their progress.
- **Expecting progress** strengthens the student's feeling of self-efficacy for further learning (Schunk, 1995). We dealt with self-valuation, attributions and self-efficacy in section 4.2.
- Anxiety related to examinations, grades and failure disrupts learning. Students who struggle with potential failure in their minds lose time and strengthen doubts about their abilities. A programme for **anxiety reduction** contains **systematic desensitisation, modelling** and **controlled self-speech**. Models express expectations or positive results (e.g. *'I know that I can pass the test.'*) rather than negative statements (*'I won't be able to pass the test.'*). Models that are initially anxious but use effective self-regulatory learning methods and perseverance until better performance is achieved are important therapeutic agents of change (Schunk, 2012).

There are specific programmes for students who have problems taking tests that teach them the necessary skills to take tests successfully (Kirkland and Hollandsworth, 1980). Usually, they teach the students to



divide the test into parts and set a time limit for each part so that the student does not spend too much time doing one task.

Furthermore, students are led to practise relaxation techniques to cope with any negative thoughts that may disrupt their work. Their performance on the test and their expectations show a mutual reciprocal relationship: experience of success strengthens one's feeling of self-efficacy, which leads to more productive behaviour and better performance in the future.

4.4 Implications Inspired by Constructivism

One of the main ideas of constructivism is the assumption that the learner constructs his/her knowledge and the methods of its acquisition and application.

For the application of **J. Piaget's** constructivist claims, it is of key importance to understand the process of **equilibration**. This is the natural tendency of a person to strive for equilibrium between the internal and external environments and occurs on the basis of two processes: **assimilation** (integrating reality into already existing mental schemata) and **accommodation** (changing the schemata based on the discordance between reality and the existing scheme).

Cognitive development appears only in situations of imbalance, in other words during cognitive conflict. This means that situations which pupils 'do not understand' are very important. For learning to occur, situations have to happen that create confusion in children's cognitive structures, resulting in children's opinions not corresponding with the observed reality. Equilibration resolves the conflict – through the processes of assimilation and accommodation.

According to Piaget, development occurs naturally through regular interaction with one's physical and social environment. The impulse for developmental change is internal and factors from the environment are external – they can influence development but cannot control it. This means that instruction has only a small influence on development.

- *Teachers can prepare an environment that will cause a conflict. However, Piaget adds pessimistically that the way in which the pupils will resolve it cannot be predicted.*

In order to achieve equilibration, the prepared **cognitive conflict** should not be too big.



- *Optimal learning occurs when there is a conflict and children are between stages. A piece of information has to be understood (assimilated) first before it causes a structural change (accommodation). Development is therefore limited by developmental obstacles.*

According to Schunk (2012), however, children, if taught to use cognitive processes effectively, can be on higher cognitive levels than Piaget assumed. Later research studies confirm that cognitive development can be affected by learning. In this connection, experts recommend the following to teachers:

- To know on what level of cognitive development individual pupils are;
- To keep children active;
- To create incongruences (conflicts) for them – e.g. problem learning, feedback, etc.;
- To provide enough social interactions – the opinions of others help make our own opinions less egocentric, which is a trait of the lower developmental stages.

Although it seems that constructivism is quite a young school of thought, its basic premises are in accordance with many older principles of learning.

The central premise of constructivism is the claim that learning involves the transformation and internalisation of one's social environment. **Language** plays a key role in this process. According to Vygotsky (1978), people and their cultural environment create an interactive social system. **Through communication and action, children learn instruments (language, symbols and signs) from adults that will help them achieve competences.** By using these instruments in the aforementioned system, an individual develops the cognitive functions of higher levels (conceptualisation, problem solving). Vygotsky used the term 'higher mental functions', meaning a **consciously controlled process of thinking**. In this sense, one can also consider the process of self-regulation to be a higher mental function. Self-regulation involves mental processes such as **memory, planning, synthesis** and **evaluation** (Henderson and Cunningham, 1994).

Vygotsky believed that people can gradually learn to control their behaviour. The main mechanisms that affect self-management are **language** and the **zone of proximal development**. Through interactions with adults in the zone of proximal development, children move from behaviour controlled by others to behaviour controlled by themselves.

Vygotsky's stance on the so-called **private language** is also interesting. It is about 'talking to oneself' as we know it from young children at play. Vygotsky believed that it helps develop thinking. Such open verbalisation increases until



the age of six to seven, then it subsides and becomes hidden – around the age of eight to ten. In older children and adults it only appears when they are faced with some problems.

- *Verbalisation of rules, processes and strategies can help increase the effectiveness of learning.*
- *Verbalisation is very useful for pupils with memory or attention problems, with learning disorders, or with mental retardation.*

How do constructivists see an effective learning environment? They recommend:

- submitting problems to the pupils that are appropriate for their abilities (see the zone of proximal development);
- structuring learning according to major concepts (see conceptualisation, higher mental operations);
- supporting the pupils in forming their own opinions and giving them feedback;
- adapting the curriculum according to the pupils' level (see the zone of proximal development);
- assessing the learning of students in the context of instruction.

An **integrated curriculum** within the framework of which a topic is studied from many perspectives is emphasised. Constructivist ideas can also be found in many **professional standards**, for instance in the pupil-oriented principles developed by the **American Psychological Association (APA)**.

Constructivism influenced theories and research on learning and development as well as thoughts about education, the curriculum and instruction. Its contributions apply particularly to instruction and setting up the curriculum and it emphasises that pupils need to be involved actively in learning and to be provided with experiences that force them to re-formulate their ideas and schemata. For this purpose, it is advisable to guide pupils especially towards the following forms of learning:

- reflective teaching,
- learning through discovery,
- learning by asking questions,
- assisted (peer) learning,
- co-operative learning.

Group learning and peer co-operation are useful (if students mutually model skills, then they learn not only the skills, but also increase their learning self-efficacy) (Schunk, 2012).



Teachers themselves and their assistance (instructional scaffolding), which should fulfil several functions, play an important role in learning:

- provide support
- function as an instrument
- broaden a pupil's horizons
- enable one to achieve goals that would otherwise not be achieved
- should be used only selectively when necessary

Reciprocal teaching occurs in contact with the teacher and is implemented in the form of an interactive dialogue between the teacher and a small group of students.

- *The teacher models the activities first and then the teacher and the pupils take turns playing the teacher.*

Peer co-operation is also important. If pupils co-operate in problem-solving, this social interaction can have an instructional function.

Another form of learning recommended by constructivism is **social guidance through apprenticeship**. Apprentices work closely with experts and do some activities together. This creates modelling and mutual learning.

The **buddy system** represents another possibility to use socially mediated learning. It is based on the assumption that success in learning depends on understanding culture. This system is currently in place at the majority of higher-education institutions in the Czech Republic which admit foreign students. It is based on a network of volunteers from the ranks of students of a faculty who become guides to and assistants of incoming foreign students. The buddy system functions in pairs, i.e. each incoming student is assigned one local student – a buddy. The buddy's main tasks are to help the newcomer overcome the cultural and language barrier and to help him/her cope with the requirements placed on him/her by the new situation. During the semester, frequent meetings are organised for the new students and their buddies where various cultures are presented and new findings are shared. A benefit for the buddies/volunteers is that they get to know the role culture plays in their studies.



Practical Application

- What kinds of practical application of important theories of learning did you experience as a pupil? What were their effects?



- What principles do you already use in your instructional practice and which ones are new for you?



Review Questions

1. What do behaviourist theories call the pleasant/unpleasant consequences of behaviour?
2. What reinforcer types do we distinguish?
3. What is Premack's principle and how can it be applied in practice?
4. According to behaviourism, what two forms of punishment can we use in practice?
5. What does the method of shaping mean and what technique works on the same principle, but progresses the opposite way?
6. How can a teacher help develop students' ability to discriminate?
7. What does self-efficacy mean and what is its role?
8. What does attribution mean and how does it relate to learning?
9. What are the possibilities of using information-processing theories in practice?
10. What types of learning strategies do you know?
11. Describe how the method of loci works.
12. What does the method for remembering numbers use?
13. In general, what principles are valid for the effective coding of information in one's long-term memory?
14. What types of mnemonic aids do you know and how can they be used?
15. What techniques do affective strategies contain? What are they generally focused on?
16. What is mental mapping useful for?
17. What is a cognitive conflict and what is its role in cognition?
18. What was J. Piaget pessimistic about in relation to children's cognition?
19. What significance for cognition does the so-called private language have?
20. What function should instructional scaffolding have?
21. What characteristics should education have in accordance with constructivist principles?
22. What types of learning should be supported in pupils by teachers?



Summary

The chapter presented the possibilities of applying four important human-learning theories in practice. Behaviourism-inspired approaches pointed out the



principles of effective rewards and punishments, the provision of feedback, and methods affecting pupils' motivation. The social-cognitive theory practically demonstrated the principles of observational learning, modelling, and the importance of the concept of self-efficacy. Within the framework of the approaches influenced by the information-processing theory, strategies focused on practising, expanding on and organising the subject matter, monitoring one's understanding, and modifying one's emotions were presented. Constructivism-inspired approaches offered stimuli for the creation of the curriculum and the selection of instructive methods and suitable educational approaches.



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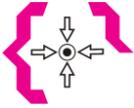
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5 Self-Reflection in the Learning Process



Objectives

After studying this chapter:

- you will understand the importance of self-reflection as it relates to learning new knowledge and skills;
- you will be able to apply the various self-reflection methods.



Time Demands

2 hours



Terms to Remember (Key Words)

- self-reflection
- model of experiential learning
- abstract conceptualisation
- unstructured self-reflective notes
- self-reflective diaries
- self-reflective chart
- self-reflection in an assumed role

Knowing our own strengths and weaknesses is one of the main ingredients in being successful and feeling satisfied during our studies. If we know our strengths, we can use them effectively. If we know our weaknesses, we can more easily detect areas we need to pay more attention to and work on. This can be subsequently used for planning our learning strategies, both in making a timetable and in choosing our learning methods.

- *For instance, if I know that my handwriting is so bad that I often cannot read my own notes, I can take notes during lectures using a laptop.*
- *Similarly to that, if I know that I learn better from my own notes than from textbooks and classmates' notes, I can faithfully attend lectures and take my own notes.*

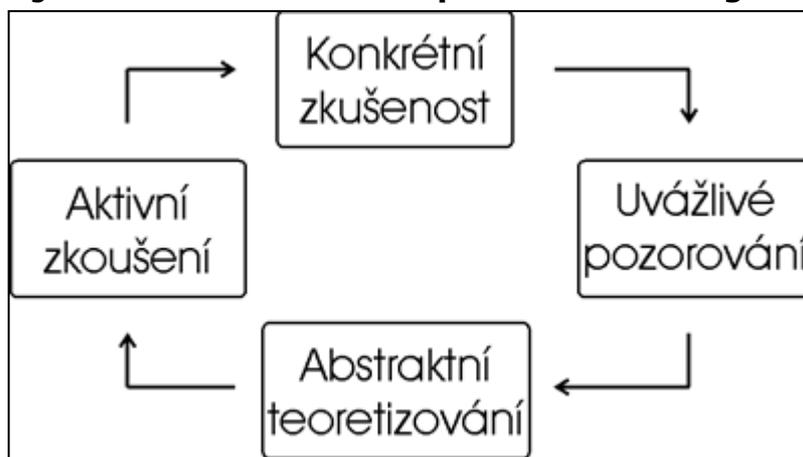


Self-knowledge in the area of learning is of key importance for the planning and evaluation of the learning process. Knowing oneself will make the entire process easier and will help one prevent stress and minimise badly invested time. It is also a path towards getting a more detached view of oneself and towards being more satisfied. It helps us see ourselves from a different perspective and make correct decisions. Every day we are involved in situations in which we are offered new products, ideas and possibilities. In order to be able to correctly choose what is good for ourselves, we need to know ourselves.

The ability to self-reflect is an important condition for one's personal development. The principle lies in learning something new in a conscious way. The American professor David Kolb expressed it in his **model of experiential learning**. This type of learning is of a cyclical nature and contains the following phases:

1. Concrete experience
2. Reflective observation
3. Abstract conceptualisation
4. Active experimentation

Figure 4: **Kolb's Model of Experiential Learning**



In Figure 4, we can see the sequence of the individual phases. Concrete experience provides a basis for observation and reflection. These reflections are summarised into abstract concepts, and new conclusions are actively tested by new experience.

Kolb says that effective learning occurs if the learning process gradually uses all four methods of learning. According to Kolb, people have a tendency to prefer

only some of the aforementioned phases, according to which he distinguished four basic learning styles:

- **Concrete experience** – these individuals prefer spontaneous experience in learning.
They like discussions, role-playing and brainstorming.
- **Reflective observation** – these individuals try to look at things from various perspectives and put off acting.
They like lectures and training sessions full of explanations.
- **Abstract conceptualisation** – these individuals like logical thinking, looking for connections between phenomena, planning, and logical conclusions.
They need to relate theory with practical application. Their typical question is: 'What does it imply?'
- **Active experimentation** – these individuals like to be active, like to gather new experience, and instead of reading and thinking about the manual to put a machine into operation, they will experiment with what the machine or device can do by trial and error.
They like open problems and problem-solving that can be simulated. Their typical question is: 'How does it work?'

How can we proceed in self-reflection?

The essence of self-reflection is an internal dialogue with oneself. Through questions we pose to ourselves we have the possibility of not only realising our own conduct, beliefs and attitudes, but also understanding the motives for our conduct and creating room for possible changes in our behaviour.

Asking oneself questions can be tried in any form. Before we start studying or in situations in which we are facing some study problems, we can pose the following questions:

What are my learning competences?

- *That my intellect is at least average is proven, among other things, by the fact that I was successful on the entrance examination. However, one needs to be frank with oneself and consider whether one was 'at the top of the admissions list' or whether 'it was a close shave'. This will help*



you see better how big an effort you will have to make, whether you can expect that learning will be easy or whether you will have to work at it.

- *When in doubt, it is advisable to contact the local higher-education counselling centre, where your learning competences will be tested or where you will be referred to experts.*
- *Learning competences are general and intellectual. Learning performance and especially successful coping with the requirements of one's future profession, however, are also affected by other factors, such as interest in the field, communication skills, emotional and personality maturity, learning skills, typing on a computer, working with a text, etc. We will focus on the most important ones.*

Have I chosen the correct field?

- *In terms of motivation, without which the level of study achievement is negligible, there is quite a big difference between studying a field I decided to study, one I dreamed about as a child, or one for which I just happened to pass the entrance exam. It pays off to be frank with oneself when answering.*
- *If I'm undecided about wanting to work in my field of study after graduation, I will probably need more motivation to complete my studies.*
- *It can happen that we find out that we do not want to remain in our current field of study. It is advisable not make a hasty decision; it is good to think about the entire issue, discuss it with colleagues or consult with a higher-education counsellor.*

How much time am I willing to devote to learning?

- *Individual study fields and teaching qualifications differ from each other not only content-wise, but also in terms of the time that needs to be devoted to studying. Therefore, it is good to know not only how much time the studies require, but also whether I'm willing to devote it to my studies. For instance, if I'm used to going to the gym three times a week, spending my evenings with friends and participating in various events each weekend, and I'm not willing to change this lifestyle of mine, I probably won't be – despite my excellent competences – successful in fields that require demanding home preparation, as I*



probably am not the type of student who will be sitting down and reading medical tomes every day.

What are the other circumstances of my studies?

- *There is certainly a big difference whether I live where I study and it takes me five minutes at most to get to a lecture or whether I have to count on spending more than one hour for the trip from the dormitory to the lecture hall or whether I commute daily from 'afar'. Not only in terms of the time that I spend travelling (in the end, I can use it for studying), but also in terms of whether the travelling does not tire me so much that I will come home on weekday evenings and fall asleep.*
- *Similarly, if I have children at home I have to take care of, I will have less time and energy for my studies.*

Another set of questions stems from the self-reflection concept of Smyth (1989, cited according to Švec, 1998). They are characterised by emphasising the gradual deepening of self-reflection and its subsequent connection to reality:

1. How am I feeling? What am I doing? What has caught my interest?

- *This is the initial, descriptive part of self-reflection.*

2. What is my starting point? What principles am I relying on?

- *The next step is to look for an explanation. We reflect deeper.*

3. How have I become who I am?

- *This is a confrontational phase. We go even deeper into our own experience.*

4. How could I do things differently?

- *The final, reconstructive phase is oriented towards practical experience that can be tested in the next cycle.*

Another method is represented by **unstructured self-reflective notes** written in a diary. In the case of future pedagogues, this can be a pedagogical diary, but also a diary in which you reflect on your own learning, your relationships with others, and any other important moments in your life.

Yet another method is the **self-reflective chart**. It focuses one's attention on the concrete aspects of reality and enables one to understand them more deeply. The following example includes the reflection and self-reflection of a



student on the topic of the instructive method a pedagogue used in a seminar (from the archive of J. Doležalová, 2001).

Table 2: **Example of a Self-Reflective Chart** (cited according to Doležalová, 2001)

Seminar	Topic	Methods Used	Notes and Evaluation
1.	a) Christopher Columbus b) Three phases of instruction	- Brainstorming - I.N.S.E.R.T. - I know – I want to know – I learned - Unstructured writing	<i>I liked the choice of the text. It was quite a problem for me to write what I think of C. C.; discussing him helped me a lot.</i>
2.	a) About the Fairy and the Shepherd b) Reading – writing – verbal communication c) Decision-making processes	- Brainstorming - Managed reading - Decision-making charts - Creative writing	<i>The division of the text into parts seems to me to be quite an effective solution. The decision-making chart can make the choice easier for pupils and it has far-reaching consequences in practical life as well (not every one, however, will want to make the results known). It was interesting how far we got in our fantasies.</i>

Yet another method of reflection is **self-reflection in an assumed role**. This enables one to look at oneself from various perspectives and thus get a detached view that would otherwise be difficult to have. It is possible to use a broad range of various roles, such as:

- **optimist** (*emphasises positive observations*);
- **pessimist** (*focuses more on what went wrong and what could go wrong*);
- **pragmatist** (*emphasises things usable in practice*);



- **doubting Thomas** (emphasises traits he/she doubts are good, expresses reasons for which some elements cannot be used, indicates pitfalls, etc.);
- **a person I respect** (an authority or a model who considers our actions from the perspective of his/her own rich experience, but is lenient and provides support);
- **pearl hunter** (looks for the essential and valuable and for quality).



Practical Application

- Experiment with some of the presented methods of self-reflection and try to evaluate which ones suit you best and why.



Review Questions

1. What does self-reflection mean?
2. What are the benefits of self-reflection?
3. Describe David Kolb's model of experiential learning.
4. What self-reflective questions does Smyth recommend asking?
5. What is the significance of self-reflective charts?
6. How can we be enriched by the results of self-reflective methods in practice?
7. Provide examples of the roles we can assume during self-reflection.



Summary

Self-knowledge with regard to learning in our field of study is important for making decisions about the future and for making one's own procedures and problem-solving methods more effective. It occurs most often through regular and frequent self-reflection. This chapter contains several tips on how to implement self-reflection and a description of the effects that we can expect after its implementation.



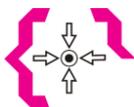


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6 Self-Regulation in the Learning Process



Objectives

This chapter provides an overview of strategies through which you can streamline your own learning. More detailed strategies will be discussed in the following topics.



Time Demands

2 hours



Terms to Remember (Key Words)

- self-regulated learning
- metacognitive skills
- metamotivational skills
- SMART goals
- time management
- procrastination

In order to study successfully, it is of key importance to evaluate and manage oneself in the learning process. Kuhl and Kraska (1996, cited according to Mareš, 1998) use the term **self-regulated learning** for these skills and distinguish its two basic components:

- **metacognitive**, the knowledge and skill to influence one's cognition;
- **metamotivational**, the knowledge and skills to manage one's motivation.

Mareš (1998) includes the following among such skills:

- planning the learning process
- managing the learning process and preparing and understanding the conditions that make the learning process easier
- self-monitoring
- effective using of one's learning style and learning strategies
- identifying problems with learning or with solving a particular task



- evaluating one's abilities, the amount of learned subject matter, etc.

6.1 Determination of Goals and Time Management

For self-regulation and the planning of any activities it is good to know what I want to achieve. **Goals** give direction to any activity of ours. However, it is important for them to be determined correctly.

When **setting goals** for ourselves, we can make various mistakes – we set them too high or too low, we forget other commitments or deadlines. These mistakes often result in us being disappointed by our failure when we find out that we did not achieve the goal.

To verify that we have set our goals correctly, there are several criteria. To remember them, note that the first letters of each of the criteria make up the word **SMART**. This is a mnemonic aid in the form of an acronym. Smart – this is how our goals should be. Therefore, it is necessary for them to have the following properties:

1. **S (specific)** – express your goals as specifically as possible. For instance, do not plan that you will study biology; write down concrete questions (topics) from biology that you should cover. With such concrete information, you will be able to plan your time more effectively.
2. **M (measurable)** – if you want to improve your math knowledge, it is advisable to express in numbers how great this progress should be. What does 'improve my knowledge' mean? For one person it means to learn everything, for another to understand equations. Try to introduce a scale that will express your progress in numbers. This can be the grades you will get, but also the feeling (degree of certainty) you have when solving problems. Be clear about the size of your goals!
3. **A (ambitious)** – set yourself goals that are important for you. Their difficulty should be a challenge for you as well!
4. **R (realistic)** – your goals should be ambitious, but also within your capabilities. It is not reasonable to set yourself the goal of getting an A in a subject you are about to fail. Setting too difficult a goal can in the end discourage you rather than motivate you. It is advisable to proceed



step by step and improve by degrees. It is time to ask yourself a question. How much is the goal under our control? One then has to consider how the newly set goal will fit in with old commitments. Don't become overwhelmed!

5. **T (time-bound)** – any goal should have a deadline, which is motivational and helps us realise what we need to cover within a certain period of time. Usually, this also leads to dividing the goal into several sub-goals for which we also set deadlines.

The determination of goals is very closely related to effective **management of one's own time**. Time is one of the important factors and prerequisites of success in university studies. Failing to manage one's time can be the reason why even talented students fail in their studies. During the term, students can have a feeling that they have a lot of time, which is then negatively manifested in the exam period when a larger number of tasks begin piling up and they can start crumbling under this pressure. **Time management** is a set of procedures, recommendations and instruments for planning one's time in order to increase the efficacy of its use. It contains a whole range of activities, which include planning, determining goals, delegating work, determining priorities, monitoring, and analysing the time spent.

We will now briefly go through the individual steps:

- **Analysis of one's own time management**

can be carried out in the form of a so-called time-lapse film by:

- *noting down your activities every 30 minutes for 14 days*
- *putting these activities into categories – e.g. at school, home preparation, part-time job, travelling, personal care and hygiene, culture; averaging these values per day for 14 days; converting the results into percentages and depicting them in a pie chart*
- *creating another, optimal pie chart alongside the resulting pie chart.*

- **Determination of realistic goals**

We set ourselves long-term goals that we divide into medium-term and short-term ones. With goals, we take into account not only work/study goals, but also personal goals. With short-term goals, we also provide ongoing verification criteria/points. Goal achievement is verified daily and



measures to enable it are undertaken. A correctly determined goal can be verified according to the aforementioned SMART criteria.

▪ **The art of distinguishing what is urgent and important and what is not**

Time management traditionally assesses each activity from two viewpoints – in terms of importance (how important it is to achieve our goals and priorities) and in terms of urgency (how quickly the task must be fulfilled). By combining these factors, four quadrants will be created in a chart (see Table 3 below):

Table 3: Categorising Goals According to Importance and Urgency

	<i>Important</i>	<i>Not important</i>
<i>Urgent</i>	IU (important and urgent)	NU (not important but urgent)
<i>Not urgent</i>	IN (important but not urgent)	NN (not important and not urgent)

According to experts, people generally give priority to urgency over importance. We give priority to what is urgent over what is important, which results in the tasks from the 'Important' category moving to the 'Urgent' category. Again, we solve problems only when they occur and do not try to prevent them from occurring.

Fourth Generation Management recommends giving priority to important activities over urgent ones. The basic recommendations are:

- *give priority not only to IU, but also to IN activities, which prevents their being moved to 'Not Important';*
- *try to avoid activities that belong to 'Not Important', especially such activities that 'look' very urgent – NU;*
- *try to avoid (by proper planning) having insufficient time, which costs us a lot of stress.*



- **The ability to integrate work into stages of various lengths and long-term goals into short-term goals**

A good plan contains:

- *partial steps leading to the achievement of the set goal,*
- *the resources and means that will need to be used to achieve it,*
- *a time schedule.*

- **Ongoing verification and progress assessment**

The monitoring of progress is an activity one cannot do without in time management. The verification of the situation should be carried out according to criteria set in advance. For instance, it is recommended to focus on the following questions:

- *How will I recognise that the goal has been achieved?*
- *How will the goal's achievement affect other areas of my life?*

- **The ability to use recording systems**

One can use paper or electronic diaries, or various computer applications whose advantage lies in the possibility of managing multiple users and making changes flexibly.

- **Elimination of undesirable time consumers**

- *learn to say NO to some people and tasks; it helps to be aware of what we say YES to instead;*
- *learn to delegate, transfer lower-priority tasks to others, and thus create an opportunity to focus on higher-priority tasks. Experts warn against the irreplaceability trap;*
- *emphasise priorities and the completion of work.*

- **Prevention of procrastination, the chronic tendency to put off duties and tasks**

This is a way an individual copes with the anxiety stemming from having to complete tasks. It can result in the inability to make decisions, stress, and feelings of guilt and incapability, which leads to further procrastination. This is a vicious circle that has to be interrupted. To prevent it, one needs to reward oneself for an activity, especially for the fulfilment of unpleasant duties.

The trend of the current concept of time management (Fourth Generation Management) is to move away from the exact planning of each minute of our



day towards a more global view of one's approach to time, towards respecting one's individuality, and towards emphasising one's life perspective.

In their work, Price and Maier (2010) provide the following summary of recommendations that should help students implement time management under the conditions of their studies. It is based on several important prerequisites: **balancing short-term and long-term goals, giving preference to important tasks over urgent tasks, making daily plans, and using suitable premises for studying.**

Table 4: **Balancing Goals in Time Management** (cited according to Price and Maier, 2010)

Long-term planning	Medium-term planning	Short-term planning
Planning → Implementation (the result of planning)		
Semester schedule	Weekly timetable	List of tasks for the day
Recognise your academic goals for the semester	Make sure that you include the deadlines from the semester schedule into your weekly planning.	This is your current time view. Regardless of the sensitive points in your schedule, always give preference to activities according to their importance.
Read through the subject descriptions, where you will find out what is expected from you	First, always think about time-dependent and very important activities (lectures, seminars, practical	
Register for the selected subjects and note down their deadlines	experience, courses, events that lead to the achievement of your goals for the semester).	Start the day by writing down the tasks that are awaiting you. Always sort them based on their importance on that day.
Find out who will help you with your plans – volunteering, ERASMUS, courses, part-time jobs, etc.	Only then find the time for activities that are less urgent and less important, but still need to be done.	PDAs have a 'to-do list' function; try using it.
Consider what software you will learn to use,		Highlight the tasks that are really important and



<p>where you will get it, and who will train you</p>	<p>Make sure that your weekly schedule includes all your activities, not only the study-related ones. Nowadays, many people use various electronic planners, organisers or mobile phones.</p>	<p>focus on them.</p>
<p>Think about regular updates to your personal development plan that will enable you to ...</p>	<p>Carefully estimate the time you will need to work on assigned tasks. This requires experience, but it is a very important skill of a good time manager.</p>	

6.2 Ongoing Evaluation

In the previous section we discussed how important it is to **make ongoing evaluations**. However, how should it be done? The following tips can help you:

- **Determine sub-goals** – you will thus recognise more easily what ‘stage’ of learning you are at by simply answering the question of whether you have already achieved this goal or not. You can easily get lost in the whole ‘pile’ of what you need to learn. Sub-goals will provide you with a better overview of the subject matter, split it into parts, help you get started with it, and make sense of it.
- **Assign particular knowledge and skills to individual sub-goals** – ‘ticking off’ what knowledge and skills you already have and which you do not have yet will allow you to ‘monitor’ whether you have already achieved the sub-goal or whether you have to continue working on it.
- **Ask yourself ‘review’ questions** – if you have a feeling that you already know everything you need, it is good to ask yourself a few ‘review’ questions to verify your feelings.
- **Write things down** – the more you write things down, the more trustworthy and truer your picture of yourself will be. ‘Writing things down’, to a certain extent, can help you watch your tendency to ‘do a



sloppy job' and will force you to think more about your learning process. Indulge yourself in this!

- **Give points** – determine a scale for each sub-goal, e.g. 1–10, with 1 = 'do not know at all' and 10 = 'know perfectly'. After evaluating what you think you know and answering review questions, assign a corresponding score on the determined scale. This corrects the tendency to assess one's performance globally, and you will better recognise the areas in which you still need to improve a bit.
- **Ask for feedback** – in some situations you may not be completely sure whether you know the subject matter or not. Ask someone around you to assess it. This feedback is often more objective and can correspond more to a teacher's assessment during an exam. One's own assessment plus an assessment by another person functions as a 'dual check' which will show your situation during a particular stage of learning better. Do not hesitate to ask for it in moments of your own uncertainty, even though you think that you have already outgrown the period of 'being examined' by your parents!



Practical Application

- **TEST YOURSELF**

The test in the following table will help your self-knowledge about how you plan, concentrate and react to changes. Do you prefer working on multiple tasks at once or do you always need to complete one and only then start working on another? Knowing yourself in terms of these categories can help you plan and spend time effectively.

Table 5: **Test of Time Preference while Learning** (freely according to Price and Maier, 2010, pp. 73–74)

	Linear-tasker	Multi-tasker	L/M?
Planning	I like to plan what I will do. Even though it is quite demanding for me,	I don't like working according to detailed plans. It	



	I need to plan everything quite carefully. I feel lost without a plan.	makes me upset.	
Focus	As soon as I start doing some activity, I devote all my attention to it and I don't like being disturbed.	I have to focus on several activities at once. I don't mind if someone disturbs me; I can then continue in my various activities.	
Reactions to changes	As soon as I have to change something in my schedule, I get upset.	I can make a rough activity schedule, but I also like changing it.	
Behaviour under pressure	I like to have an overview about what exactly I will be facing during the exam period. I can see what tasks have preference over others. Thanks to this ongoing verification, I feel fine and can prevent being under pressure by having several tasks at once.	I work best under time pressure. I often do several things at once that should already be done. I cannot see what I should be focusing on at any given moment; instead I try to complete everything at once.	

Evaluation and recommendations:

What approach prevails in your behaviour? Do you know its strengths and weaknesses?

If you are more of a linear-tasker:

- You need to have your time strongly under control, you can plan, and you like to complete one task before you start working on another. When deadlines overlap, you can have a feeling that you cannot manage. Therefore, it is good to try to divide the individual tasks into smaller



parts. This is the only way not to lose the feeling that you are working in a linear fashion.

If you are more of a multi-tasker:

- Time pressure is your friend, helping you with better performance. You also do not have problems staying focused when your activity is interrupted or paused. Your biggest weakness is related to your tendency to put tasks off until the last possible moment. There are hardly any time reserves in your life and then it can happen that an unexpected complication occurs and you will not meet the deadline. One cannot but recommend that you start, at least roughly, planning your tasks and think about which should be given preference over others and which can wait a few more days.



Review Questions

1. What does 'self-regulated learning' mean? What two components does it consist of?
2. What procedure should we apply when determining goals for ourselves?
3. What criteria do SMART goals contain?
4. What is time management based on?
5. What methods can we use to gradually evaluate the achievement of our goals?



Summary

The chapter introduces the basic elements of self-regulated learning – determining effective goals, time management, and monitoring goal achievement. One of the following chapters will deal with the methods of coping with emotions and motivation.



Literature

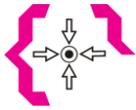
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7 Working with Subject Matter – Preparation



Objectives

After studying this chapter:

- you will have an overview of the different kinds of relevant study sources, various types of notes, and the importance of organising them;
- you will have an opportunity to try out the individual methods of note-taking and thus enrich your current learning style with new possibilities.



Time Demands

2 hours



Terms to Remember (Key Words)

- relevant sources
- creating notes
- organising the subject matter
- reading an expert text
- reading with comprehension
- critical thinking

The actual 'sitting down with the book' is usually preceded (or should be preceded) by learning preparation. It is necessary to get oriented and to get an overview of the subjects one will have to complete in the given period of time, and to have an idea about the required outputs and their time demands. Generally, the more thorough one's preparation is, the more relaxed and the more effective the actual learning and its results are. Before the actual learning, one needs **to find suitable sources and to consider ones methods of taking notes and organising the subject matter.**



7.1 Looking for Relevant Sources

Having the right study sources is the foundation for one's studies. The following list offers information on how to find suitable sources:

1. **Look in the syllabi and subject plans** – they provide information about the basic literature on which the subject is built and other supplementary sources.
 - *It is advisable to get some of these books before the instruction begins, to read them through and to get to know the key words, as this will make the understanding of the subject matter during lectures and the creation of a thought framework, into which the later acquired knowledge will fit well, easier.*
 - *Furthermore, in the syllabus you will learn what the sequence of the individual topics at lectures and practica will be, which can help clarify their mutual relations and also help one compare the programme of the lecture topics with the topics in the literature. This all leads to making one's ideas about the subject, its parts and properties clearer. During lectures, the student will have an easier time taking notes and distinguishing the important from the less important.*
2. **Attend lectures and seminars** – even though many of them are not mandatory, participating in them has a host of invaluable advantages.
 - *At lectures, instructors usually provide the students with information about the outputs and clarify which literature sources should be given preference and why, and if not, they can be asked about it.*
3. **Be in touch with other students** – they will provide you with information about the availability of sources in libraries or bookstores, they can explain a passage you did not understand at the lecture, or you can agree on taking notes collectively. In such a state of information awareness, it will be easier to select materials for self-study and essential ideas to note down.
4. **Do a careful search on the Internet** – this can help you get information quickly and from the comfort of your home, but not all its sources are trustworthy and of appropriate quality.
 - *Generally, one can recommend the Internet as a source of information about the existence of various sources, about their availability, or as a complementary helper – e.g. an online dictionary of foreignisms and trade terms, an online foreign-*



language dictionary, or an encyclopaedia to get a general overview.

- *Specialised e-learning websites and learning materials uploaded by instructors onto the faculty's webpages are designed for students.*
- *The Internet also contains plenty of unofficial websites with materials regarding questions at examinations. However, to rely solely on them can become a stumbling block in the exam – because you did not read the original source, valuable context can elude you, which can make it impossible for you to understand the subject matter. These materials can also include errors.*

7.2 Creating Quality Notes

Notes are a key source of study information which we get either during lectures or when working with a professional printed text.

It pays off to approach their creation responsibly and with prudence from the very beginning. You will be using them further during the semester to comprehend a whole section of knowledge, to write your term paper, and to prepare for an examination. Furthermore, quality notes will last until the end of one's studies and can be used to prepare for the state final examination. Creating notes is a process that contains a host of individual skills. Experts recommend the following:

1. Be prepared in advance

- *Learn the programme of the lecture, all the topics and key words of the subject, and read through some of the recommended literature. Take the study text with you to the lecture and add only complementary notes to the existing text. During the presentation, this will keep you active and you will still have room to compare ideas. You will also be more relaxed when asking the instructor questions.*

2. Analyse what you are reading or hearing

- *Ask yourself: Why is the instructor speaking about the given thing? How is it related to the rest of the topic?*

3. Work with key terms

- *Write them down and look them up later. How are they related to the entire topic and the theory presented?*



4. **Select the essential information and distinguish it from that which is less important**
 - *Ask yourself: Is this piece of information or example essential? Is this a new topic or a sub-topic?*
5. **Compare information**
 - *Ask yourself: Is the thing the instructor has just described in accordance with what I already know or have read, or is it contradictory?*
6. **Create your own summaries**
 - *Focus on the question: What is the instructor trying to get at?*
7. **Try out various note-taking methods**
 - *Evaluate which type is the most useful for you with regard to your idiosyncrasies and to the specifics of your field of study.*

7.3 Organising the Subject Matter

Notes created over time have to be stored somewhere. It is necessary to be thorough when filing notes, and if we succeed in acquiring this habit, we have a lot of advantages on our side: an overview of the currently discussed subject matter, easier reverse look-up, more effectively spent time is allotted for studies, and thus better results are achieved in tests and examinations. How should we proceed?

1. **Make decisions**
 - *The entire process of organising the subject matter can be compared to a series of decisions. We select rules for the sorting of the subject matter and the method of its ordering and labelling. You do not have to be afraid to make a decision; the decision is up to you. It is important for the chosen criteria to suit you, to provide you with a good overview and to be easily remembered.*
2. **Sort**
 - *Create stores for the subject matter and notes from various subjects. File the notes in individual subjects, for instance, chronologically according to the date they were created, or alphabetically, or according to other criteria.*
3. **Label the information**



- *Today the logic of ordering may be clear to us, but it does not have to be so in a few weeks. Strive for the most exact description and labelling of individual sources and contributions.*

4. Write lists

- *This will provide a better overview of the entire collection of knowledge and contribute to quick orientation in it.*

5. Number topics, pages and headlines

- *This simple method of labelling will also facilitate better orientation in the entire collection.*

6. Create summaries

- *Brief summaries of knowledge will help one understand the subject matter more easily.*

7. Use various helpers

- *A computer, a college notebook, binders, or a card index. Furthermore, it is also suitable to use colours, e.g. in the form of coloured paper, markers, highlighters or labels. If you are not accustomed to using them, learn!*



Practical Application

- TEST YOURSELF: How do you take notes?

Note-taking methods can differ with individual students. However, the method you use should be effective and enable you to return to your notes later and to use them for learning, writing papers and revision. The questions in Table 6 will help you become aware of your own method. Subsequently, you should consider how useful the individual processes are for you and whether you should try to change them.

Table 6: **The Actual Process of Taking Notes** (freely according to Price and Maier, 2010, p. 95)

Which of the following statements apply to you?	Yes	No
1. I hardly ever take notes.	<input type="checkbox"/>	<input type="checkbox"/>
2. I usually write one or two words for each topic.	<input type="checkbox"/>	<input type="checkbox"/>
3. I try to take verbatim notes on the presentation.	<input type="checkbox"/>	<input type="checkbox"/>
4. I find that I sometimes miss a whole part of the presentation.	<input type="checkbox"/>	<input type="checkbox"/>



5. When I look at my notes after some time, they make no sense to me.		
6. I cannot listen to what the instructor is explaining and take notes at the same time.		
7. My notes are almost illegible to me.		
8. I take notes in the form of whole sentences.		
9. I like dividing notes into paragraphs.		
10. I use various colours when taking notes.		
11. I start panicking if I don't know how to write some word or name.		
12. I use bullets when taking notes.		
13. I process information in the form of a concept map.		
14. If someone speaks too quickly, I can't take notes.		
15. I can't recognise the non-essential information in the instructor's presentation.		
16. I have all my notes in one folder.		
17. I use abbreviations for common and frequently recurring words in my notes.		
18. I have my own system of abbreviations.		
19. I hardly ever return to my notes.		
20. I use a laptop to take my notes.		
21. I record notes using a voice recorder or other device.		

Try out various note-taking methods:

Linear text – a school classic; the simplest and most common method, using bullets and numbers

Figure 5: **An Example of the Linear Method of Taking Notes** (freely according to Price and Maier, 2010)



Polární medvědi

- Základní informace:
 - Arктиčtí praobyvatelé
 - Severní pól
 - Zmrzlé prostředí
 - Dobře maskovaní
- Udržet teplo
 - Kožešina obsahuje velrybí tuk
 - Vrstva 8-10 cm
 - Zadržuje teplo
 - Následek toho, že se živí tuleni
 - Vnější srst
 - silná
 - Vnitřní srst
 - načechraná
- Potrava
 - Masožravci
 - Živí se kořistí

Tables – a method used when we revise the subject matter, are able to understand it comprehensively, categorise it and summarise it.

Table 7: **An Example of Summarising the Subject Matter Systematically into a Table** (freely according to Price and Maier, 2010)

Intelligence Type	Theoretician	Brief Description	Comment
General	Spearman	One type of mental ability controls conduct and thought.	A traditional view of the issue. Easily measured. Depends on the speed of information processing. Many opponents.
Multiple	Gardner	Nine various types of intelligence, e.g. musical, linguistic, mathematical, etc.	No agreement about what types of intelligence should be included in this theory. Hard to measure.
Triarchic	Sternberg	Three different components.	Analytical and practical components are separate. Based on Gardner's theory.



Diagrams and hierarchy – illustrate the context instead of detailed data and enable one to get a quick overview. The following two figures are examples of two types of diagram.

Figure 6: **An Example of a Branching Diagram** (freely according to Price and Maier, 2010)

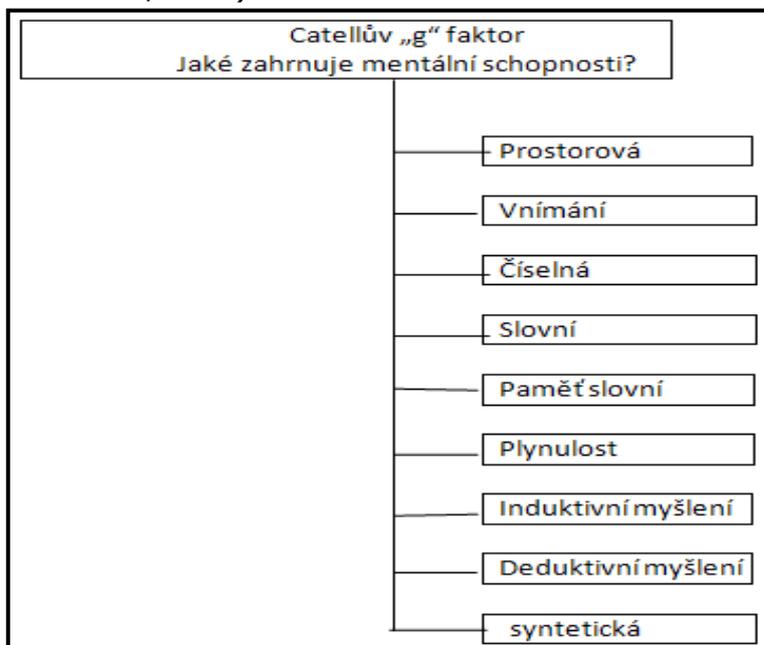
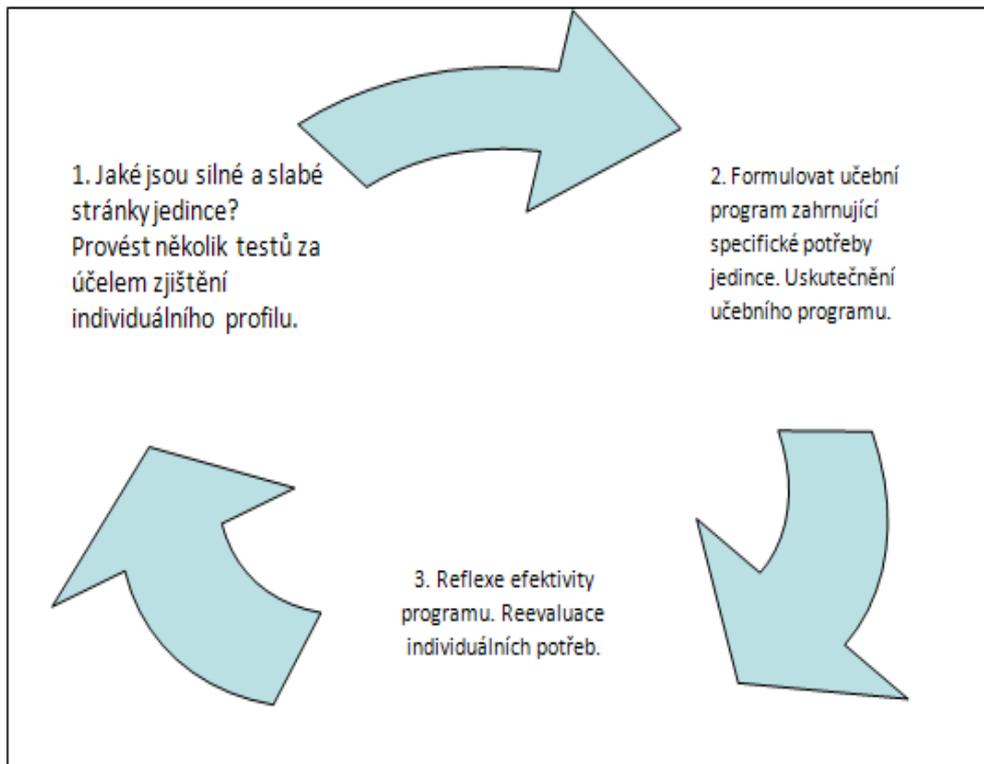


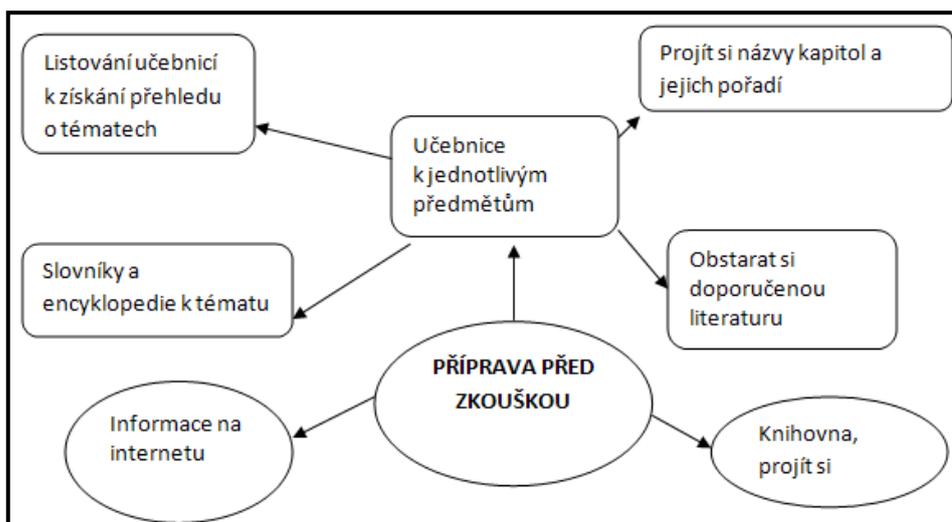
Figure 7: **An Example of a Developmental Diagram on the Topic 'The Instruction of Students with Specific Needs'** (freely according to Price and Maier, 2010)





Concept maps – quite a difficult method but suitable for students who need visualisation during learning and can use both hemispheres. It has to be practised sufficiently, but then it will become an entertaining activity that can keep our attention during lectures.

Figure 8: **An Example of a Concept Map** (freely according to Price and Maier, 2010)



Abbreviations and rules – save time when taking notes and help make the written text clearer. One uses verbal and graphic symbols (arrows to depict relationships, colours for various levels of information, omitting endings or vowels, using the first letters of written terms, etc.).

Table 8: **Examples of Rules and Abbreviations in Note-taking** (freely according to Price and Maier, 2010)

Rule	Example
Omit word endings	Sub pap on Fri
Omit some vowels	mktg = marketing; dvpt = development
Use only first letters	CS = circulatory system; NS = nervous system
Abbreviation	Meaning
viz	see
cf.	compare to
∴	therefore
∵	because
+	plus; and

Cornell Note-taking System – a comprehensive method developed by Professor Pauk of Cornell University 40 years ago. It is a format which factors in multiple stages of working on one’s notes – during the lecture, soon after the lecture, and during later revision. The goal is to teach students to work effectively with their notes.

Table 9: **A Form for Taking Notes According to the Cornell Note-taking System** (freely according to Price and Maier, 2010)

A. Lecture title:		Date:	Lecturer’s name:
Page number:			
B. Space to take notes during the lecture:	C. Additional notes on the lecture:		
	<ul style="list-style-type: none"> • Key words • Key principles • Key theoreticians/names • Additional information you remember from the presentation, but did not have time to write down 		
D. Later revision:			
Questions:			





Review Questions

1. What approaches can be used when looking for relevant learning sources?
2. What can make the Internet a risky source of information and what should one pay attention to?
3. How can we sort our notes better?
4. Which methods of note-taking struck your fancy?
5. Which methods, on the other hand, were not successful for you?
6. Which methods suit your needs in individual subjects the most?



Summary

This chapter contains a summary of practical recommendations for more effective studies related to the initial, preparatory phase of working with subject matter. We recommend that you devote enough time to trying out the various note-taking methods. If one of them strikes your fancy, devote some time to practising it so that it functions well in practice.

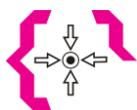


Literature

- BEDRNOVÁ, E. et al. *Management osobního rozvoje*. Duševní hygiena, sebeřízení a efektivní životní styl. Praha: Management Press, 2009.
- FRYJAUSOVÁ, E. *Jak uspět na vysoké škole*. Informace, rady a zkušenosti pro studenty – zelenáče. Brno: Computer Press, 2006.
- JUKLOVÁ, K. *Pomoci uspět na vysoké škole: manuál pro vysokoškolské poradce*. Hradec Králové: Gaudeamus, 2011.
- KAHN, N. B. *Jak efektivně studovat a pracovat s informacemi*. Praha: Portál, 1998.
- PRICE, G., MAIER, P. *Efektivní studijní dovednosti. Odemkněte svůj potenciál*. Praha: Grada, 2010.



8 Working with Subject Matter – Text Reading and Critical Thinking



Objectives

After studying this chapter:

- you will have an overview of the various types of expert texts and their genres and purposes;
- you will have recommendations for various reading techniques that you can test;
- you will know the importance of critical reading and the methods to use to develop this skill;
- you will have the opportunity, through tests and the final overview, to reflect on your own reading technique, which is a good starting point for any change or development.

Time Demands

2 hours



Terms to Remember (Key Words)

- textbook
- expert texts
- scanning
- SQ3R
- basic reading level
- advanced reading level
- professional reading level
- critical thinking
- types of expert texts
- genres of expert texts
- superficial reading
- deep reading
- taking notes while reading

No one's studies can do **without reading**. It is a source of necessary information that one needs to know to study successfully, but it is also a prerequisite for future employment and success in life. We are living at a time when one can get any information one wants; however, one needs to know how to find it, process it and evaluate it. For this purpose, we need to be able to read well. People who read regularly – fine literature, newspaper articles or expert texts – not only get new information but also stimulate their thinking.



When studying at a higher-education institution, it is typical to use not only textbooks but also expert texts. Reading them is more demanding. How do expert texts differ from textbooks?

Textbooks are a demonstrative, well-arranged and systematic text that follows mainly didactic objectives. They usually do not require the initiative of the reader; quite the contrary, in fact, as the use of textbooks is managed by a clearly formulated 'manual' and instructions. Textbooks also use various forms of text highlighting.

As opposed to textbooks, **expert texts** are mainly a means of communication between experts. They usually do not explain the starting points of the concepts described in them and expect that the readers have been instructed. The main content of expert texts consists of research reports and their results, new directions and thoughts in the field, etc.

Today, students have access to quite a large number of textbooks and university texts that have been compiled, and we, the instructors, often encounter the question from students whether it would not be enough to learn just the content of the university texts. However, in accordance with Šanderová (2009), we believe that compiled texts on their own are not enough for higher education.

'The prescribed texts primarily represent a suggestion for consideration and not a file of facts for mechanical learning. It is not enough to know what each word means and who posited what theory. It is about understanding the issue and realising that it has various solutions that depend on how we approach it. This cannot be achieved in any other way than by reading authentic texts. Textbooks are already condensed, and therefore to a certain extent always distort information about how individual researchers resolved a certain issue. We will learn the theory from them, which does not mean that we have been introduced to the theory. To know one's field means to know the expert literature, not the study texts. One's preparation for reading expert texts can never consist of memorising textbooks, but only of studying the texts themselves.' (Šanderová, 2009, p. 16)

In this chapter, we will try to introduce the principles of reading an expert text effectively and to provide you with several practical recommendations that you will be able to test yourself.



An expert text that comes into our hands is usually read several times, each time with a slightly different intention. First, we start by **creating a general overview** of the text. Excellent initial orientation can be gained by reading a book's table of contents or an article's abstract. In a few lines we will learn what to look for in the book and what won't be found in it and whether or not the book is suitable for us.

The next step is **scanning**. It will help us gather as much information as we need as quickly as possible.

- *The technique of scanning consists of using visual perception of the text while being sensitive to essential headlines, highlighted passages, key words and summaries.*
- *Furthermore, it is recommended to notice **nouns** (information about the text content), **verbs** (which express relationships between the nouns), and **conjunction expressions** (important stylistic elements which express the overall meaning of the text).*
- *The result of scanning is a general overview or impression of the text, not detailed knowledge. However, it can be very useful in making a decision on whether or not the text is suitable for our purposes.*

Expert texts are of varying complexity. However, it is certain that our task involves not only reading them, but also understanding them and gleaning essential information and messages from them. A generally recommended technique for deep reading is **SQ3R**. This is an approach whose result is to comprehend and effectively remember read information. The entire approach has five stages:

- S – survey
- Q – question
- R – read
- R – recite
- R – review

In stage S, we start by reading the table of contents and scanning part of the text. The goal of this stage is to get an awareness of the book's content and to make a decision on whether it is a relevant source and whether there are passages suitable for studying.



If we decide to continue to read the document, **in stage Q** we ask questions for which we will be looking for answers in the document. The questions will come to your mind already during scanning, so write them down. They are related to the content of the text and should help make your reading more motivated and attentive.

During **stage R (read)**, we divide the text into smaller sections and look for answers to questions in individual paragraphs; we try to find the main idea and notice the words that capture it. We also pay attention to figures, tables, and graphs.

In the second stage R (recall), we recall what we have found, verify whether we have received the answers to our questions, sort the answers, and write them down using key words.

In the last stage R (review), we review what we have remembered. In this stage we try to say the important ideas or the answers to our questions out loud.

According to Price and Maier (2010), understanding an expert text can have three skill levels:

1. **Basic level**

- *includes the acquisition of the skills of reading, appropriate fluency, and understanding the text's language, topic and terminology;*
- ***for correct speed**, it is more suitable to read words in groups and not one by one, to gradually enlarge the groups of words read in one go (e.g. by putting the text you're reading further away from you), not to 'get stuck' on one idea, and not to jump back – better to stop for a while, consider it and continue on than return;*
- *use a pencil or the cursor and follow the line.*

2. **Advanced level**

- *at this level, it is particularly about comprehending the style of the expert text and about the ability to analyse the ideas of various authors and to reflect on them;*
- *the expert text can serve various purposes that have to be reflected on, according to which we can distinguish different types of expert texts, with their own form and difficulty:*



- **study texts** (textbooks, university study texts) – less complex, demonstrative, usually a compilation of original sources;
 - **popularisation texts** – in a popular/scientific way, these texts provide scientific knowledge, a less complex explanatory style and a more accessible form;
 - **encyclopaedic texts** (dictionaries) – provide a better overview of the issue in question or apply it practically; they are designed for the broader expert public;
 - **scientific texts** (scientific monographs, expert articles, overviews) – offer new scientific knowledge.
- According to the chosen methodology and composition of the text, we can further distinguish various genres of expert texts (Šanderová, 2005):
- **Compilation** – puts knowledge from various expert works together. However, it is not plagiarism. It cannot be a mere descriptive overview of scientific knowledge that is mechanically connected. The author's own opinions and statements are expected as well.
 - **Comparison** – a comparison of two or more approaches, concepts, opinions, works, etc. focused on a certain phenomenon, problem or a method for its solution. The starting point is to find the criterion for the comparison.
 - **Review essay** – as opposed to a normal review, it is less descriptive, more analytical and substantially larger. A succinct description of the work's weaknesses, a factual polemic, and an expression of critical opinions.
 - **Overview essay** – an exhaustive overview of the opinions (past and present) on a certain theme or problem with the representative provision of all important available information sources. Close to a compilation or a comparison.
 - **Expert essay** – deals with a current topic in a new, original way, and is not as much a systematic view, but an expression of the author's unique personal approach, belief and conviction. An expert consideration on the borders of science, journalism and art. It requires a certain literary talent.



- **Original theoretical essay** – an analytical-synthetic and critical original text using one's own methodological and theoretical foundations.

3. Professional level

- *lies in the ability to compare and connect the ideas of various authors, to assess the trustworthiness of an entire text, and to create one's own critical opinion of what has been read. The ability to recognise controversies and double meanings in a text.*

The goal of a student at a higher-education institution should be to gradually develop his/her reading skills so as to be able to comprehend ever more complex expert texts.

The quality of reading which is connected with the more advanced levels of the skill and which should accompany one's reading of any expert text is called **critical thinking**. It is based on an in-depth approach, within the framework of which we not only look for partial information, but also entire complexes of ways of thinking in the text.

We can recognise that we are 'properly critical' while reading by being able to:

- understand what the author wanted to say,
- gradually ask ourselves questions while reading,
- add new information to existing knowledge,
- apply new principles in familiar situations,
- think about the logic of the arguments presented,
- judge the substantiation of the conclusion.

Critical thinking is also known as the ability to 'read between the lines'. This is the ability to:

- **have a detached view of the read text and to analyse the argumentation,**
- **find and critically evaluate important expressions and passages,**
- **evaluate the trustworthiness of sources and the justifiability of the claims.**

To develop this ability, experts recommend gradually asking oneself questions while reading, such as:

- *What are the main arguments in the text?*
- *How does the author prove his/her arguments?*



- *What hypothesis is hidden behind the provided evidence?*
- *Is the text trustworthy?*
- *How does the author think?*
- *Can the evidence be disproved?*

The authors also distinguish between superficial reading and deep reading. In the case of **superficial reading**, we read the text and look only for certain pieces of information, but we cannot perceive these pieces as belonging to some context. **Deep reading** is marked by efforts to understand what the author wanted to say in his/her entire text. We not only look for particular pieces of information, but also for ways of thinking. During our reading, we ask ourselves questions and try to add new information to our existing knowledge. We think about the logic and trustworthiness of the arguments used and evaluate whether the text's conclusions are substantiated.

The reading of an expert text should also result in its **written documentation**. It can have various forms (Šanderová, 2005):

- **Thesis** – captures the main ideas of a scientific text;
- **Conspectus** – a more detailed summary from the text's contents which expresses the main ideas of the text;
- **Excerpts** – detailed notes for further scientific use. They include basic bibliographic data about the text, a description of chapter contents, and the most important quotes in the original (including the page number) or important paraphrases of a part of the text (including the page number). Excerpts can be of various lengths; their usual length is in the ratios of 1:10, 1:6 or 1:4;
- **Notes** – capture interesting or stimulating ideas in one's own words;
- **Annotation** – a brief description of a book or a paper written in one or several paragraphs.

If we include quotations in the notes, they must be accompanied with a page-number reference. It is most suitable to keep one's documentation on a computer and perform regular data back-ups.



Practical Application



- **TEST YOURSELF: How fast do you read?**

Appropriate reading speed is also a part of effective studies. The average student at a higher-education institution can read 250 words per minute. An effective reader can scan a block of words in less than a quarter of a second. How about you?

Follow these steps:

1. Prepare a study text you are not familiar with.
2. Set the stopwatch for 10 minutes.
3. Count how many words you read in that time and divided it by ten.

Compare your result with the aforementioned figures. If the number of words you can read in one minute is below 150, you should definitely try to improve. **The following tips** will help you do that (freely according to Price and Maier, 2010):

- **Practise** – the more you practise reading fast, the better. In the beginning, choose less complex texts.
- **Increase the amount of information your brain can receive**, even with the ‘corner of the eye’ – try to read a whole sentence rather than individual words. Practice will help you learn to read even very long sentences in one go.
- **Read faster and with better understanding** – it is better to read difficult passages twice but quickly rather than once and very slowly.
- **Improve your reading fluency**– try not to go back to passages you do not understand, as you will interrupt the speed of understanding the information.
- **Look up new terms** – look up terms you do not understand in a dictionary or encyclopaedia in advance. Devote five minutes before each reading session to get to know the key words.
- **Watch out for an ‘echo’ in your head** – try to advance by only looking at the words and moving just your eyes.

- **TEST YOURSELF: What type of reader are you?**



Table 10: **Test – What Type of Reader Am I?** (freely according to Price and Maier, 2010)

Question number	Description	Yes	No
1.	I read less recommended literature than expected from me in the given subject.		
2.	I very much try to remember what I read – important facts on each page.		
3.	When I read, I try to look for the context with information in other related topics.		
4.	When I read an article or a book, I try to understand exactly what the author wanted to say with his/her text.		
5.	I often ask myself what I am reading and what the author of the text is getting at.		
6.	When I read, I focus on learning a few pieces of information that are necessary for me to pass the exam.		
7.	When I read, I sometimes stop and try to reflect on what the text provides me with and what I remember.		
8.	When I read, I carefully focus on details so as to determine how they fit in with the rest of the text.		
9.	I like books that challenge one to think and explain what was hinted at in lectures and seminars.		
10.	I like books in which I find basic facts and information that can be easily understood.		
11.	When I find a magazine article on a topic, I read it from the beginning to the end.		
12.	I take notes while reading.		

The test that originated based on the work of N. Entwistle (Price and Maier, 2010) distinguishes two approaches: superficial and deep. If you answered questions 1, 2, 6, 10, 11 and 12 with a 'yes', your approach to reading is superficial. You read to remember important facts and use them later in an exam or in a paper. However, you have a problem understanding the text, you cannot think critically, and your reading is quite ineffective.

If you answered questions 3, 4, 5, 7, 8 and 9 with a 'yes', your approach to reading is **deep**. You think about the information you receive and you try to understand it within the wider context of your knowledge. You have a spirit of initiative.



- **One more test in conclusion:**

Table 11: **Test – How Critical Are You When Reading?** (freely according to Price and Maier, 2010)

Reading Degree	Skill Description	Skill Level
1	Possess basic knowledge of the topic/field, understand what's written in the text	Basic (beginner)
2	Understand the expert terminology in the text	Basic (beginner)
3	Realise what style experts use in the field in question	Advanced beginner
4	Analyse what various authors write on a certain topic	Advanced
5	Reflect on what is being read	Advanced
6	Summarise the thoughts of various theoreticians – synthesise	Highly advanced
7	Evaluate the trustworthiness of the text	Highly advanced
8	Form one's own opinion on the read text	Highly advanced



Review Questions

1. What does the scanning method involve? What is this method of reading most suitable for?
2. What three levels of understanding can be achieved with regard to reading an expert text? What is their nature?
3. What is hidden behind the acronym SQ3R? What is this approach good for?
4. How do we recognise whether our thinking is critical or not?
5. How can we develop critical thinking?
6. What forms can the written documentation we create while reading an expert text have?
7. What are the features of deep reading of an expert text and how are they different from those of superficial reading?
8. What purposes are expert texts written for?
9. What genres of expert texts can we distinguish?
10. How can we train ourselves to read faster?





Summary

This chapter deals with reading expert texts. It focuses on the various types of reading needed during the various stages of one's studies: scanning, reading levels, and critical thinking. The chapter also contains two tests focused on reading and a self-reflective table to assess critical reading.



Literature

BEDRNOVÁ, E. et al. *Management osobního rozvoje. Duševní hygiena, sebeřízení a efektivní životní styl*. Praha: Management Press, 2009.

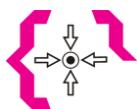
FRYJAUSOVÁ, E. *Jak uspět na vysoké škole. Informace, rady a zkušenosti pro studenty – zelenáče*. Brno: Computer Press, 2006.

KAHN, N. B. *Jak efektivně studovat a pracovat s informacemi*. Praha: Portál, 1998.

PRICE, G., MAIER, P. *Efektivní studijní dovednosti. Odemkněte svůj potenciál*. Praha: Grada, 2010.

ŠANDEROVÁ, J. *Jak číst a psát odborný text ve společenských vědách*. Praha: Sociologické nakladatelství SLON, 2009. ISBN 978 80 86429 40 3.

9 Writing an Expert Text and Preparing a Presentation



Objectives

After studying this chapter:

- you will have an overview of the steps that need to be taken when preparing to write a paper and to give an oral presentation;
- you will be aware of the issue of plagiarism and will have the opportunity to verify whether you understand it correctly.

Time Demands



Univerzita Hradec Králové
Pedagogická fakulta

Obor: Učitelství – společný základ dvouoborových studií

2 hours



Terms to Remember (Key Words)

- preparatory stage of writing a paper
- stage of actual writing
- BUG method
- empirical papers
- non-empirical papers
- interpreting results
- the author's 'we'
- first-person narrative
- third-person narrative
- impersonal form
- abstract
- summary
- annotation
- review
- plagiarism

9.1 Written (Term) Paper

To write a paper means **to create a cohesive text divided into paragraphs with a clear internal structure**. We can distinguish two main stages in writing an expert text: the preparatory (research) stage and the stage of actual writing (processing).

1. During the **preparatory stage** we clarify what we are going to write, what sources we will start from, and if we are doing research, what research methods we will use.

- *Sometimes it happens that students do not understand their term-paper assignment and their paper then does not correspond to the instructor's requirements. Price and Maier (2010) recommend using the BUG method:*
 - ***Box – put words expressing action into a box.*** They tell you what to do or what type of work is required from you.
 - ***Underline the words in a question.*** These are key words that will lead you to the core.
 - ***Glance back to check.*** Verify whether you have noticed all important expressions.

If the topic of the paper is up to you, try to respect the following rules:

- choose a suitably broad topic,
- choose a topic that has not been elaborated in detail yet,
- choose a topic on which there are enough expert sources,



- choose a meaningful topic,
- choose a topic that you are able to carry out.

Furthermore, the preparatory stage contains the **gathering of expert sources or data and studying them** (if research is involved, data collection and processing). The preparatory stage ends by writing the final **outline of the paper**.

A **time plan** represents an important part of the preparatory stage. In general, it is recommended to count on writing two to four pages a day on average. One should not forget the time necessary for the preparatory stage (topic selection, gathering information sources, studying materials, collecting data, and writing the final outline). This stage is roughly as time-demanding as the actual writing. More time will be spent on correcting the text. Count on one to two weeks for a longer paper such as a bachelor's or master's thesis.

- *For example, if we consider a 50-page master's thesis, one will need around 17 days to write it; with some reserve, let's say three weeks. Add one or two weeks for corrections, which makes it four to five weeks now. If we assume that the preparatory stage will be equally long, writing a master's thesis will take a bit over two months of normal working time.*

2. The stage of actual writing (elaboration) first contains the creation of a working version of the text. It is followed by a content review and ends with formal and linguistic proofreading.

The structure of the paper is fixed. So-called **non-empirical papers**, which we can encounter especially in the social sciences, traditionally consist of three parts: the introduction, the actual text, and the conclusion.

- **In the introduction**, the paper's topic and objectives are defined, and its starting points and investigated issues are described. The methods used in the paper and the author's approach can also be hinted at. The introduction also includes presenting the structure of the entire paper to the reader.
- **In the actual text**, the issue is analysed. It can be further divided into a **theoretical part** and a **practical (application) part**. It is important that it includes a detailed description of the methods of



elaboration in addition to conclusions. Arguments are an integral component as well. The most frequent types of arguments are (Price and Maier, 2010):

1. defining the problem,
 2. cause and effect,
 3. starting with an observation or a hypothesis,
 4. considering the meaning of certain words, the contribution and significance of a certain phenomenon,
 5. comparison and context.
- **In the conclusion**, the results and findings are summarised and the questions formulated in the introduction are answered. No new arguments appear here.

With empirical (research) papers, which usually appear in the natural sciences, the following structure is typically adhered to:

- **The introduction**, which defines the topic, goal, starting points and structure of the paper.
- **The existing state of cognition**, i.e. a summary of the main theses and assumptions on which the research intention is based. This part usually results in the **formulation of hypotheses**.
- **The research and its results**. In this part, the reader is introduced to the methods of data collection and analysis, to the features of the investigated cohort, and particularly to the research results.
- **The interpretation of the research results** is the part in which the author tries to explain the circumstances and influences of the new findings and what these findings actually mean.
- **The conclusion** again summarises the essential findings and answers the questions formulated in the introductory part of the paper.

The author of the text also has to make a decision about what grammatical person he/she will be. It is important for it to be consistent throughout the paper. He/she can choose from the following options:

- **The author's 'we'** is expressed in plural (*e.g. We understand socialisation as...*). The plural can also be used when including another author or even the reader – the so-called inclusive plural (*e.g. Let us now have a look at...*);



- **The first-person narrative**, where the author expresses him/herself in the first person singular (*e.g. Now I will try to explain...*);
- **The third-person narrative**, in which the author expresses him/herself in the role of a narrator in the third person singular (*e.g. The author is of the opinion that...*). The third-person narrative can also take the form of the neuter third person (*e.g. As mentioned earlier, one cannot...*);
- **The impersonal form** is used most frequently. Verbs are used in the passive voice (*e.g. The term is translated as...*).

An important aspect of the quality of the paper is its **adherence to ethical principles**. In the text, there should be a strict distinction between the author's ideas, generally known ideas, and ideas taken from other authors or inspired by them. An exact reference in accordance with the valid citation standard should be made to the authors of such ideas. Because of ignorance of these rules and principles and due to insufficient skill with regard to working with information sources, many people commit **plagiarism**. *The Dictionary of Foreignisms* defines plagiarism as: *copying, using another person's work as one's own, not providing sources the paper draws from, or publishing other people's research and development results without providing the sources.*² New students often unknowingly commit plagiarism. Many times they are not even aware that the method of working with ideas in their papers is in contradiction to author ethics. Price and Maier (2010) summarise the following situations that are considered plagiarism:

- copying another person's text or a part of it,
- copying words or collocations from another person's text,
- not stating all the sources used in the paper,
- downloading text from the Internet and presenting it as one's own,
- reformulating (paraphrasing) another person's text without providing the source and presenting it as one's own,
- copying a text or a part of a text from a classmate without providing the source,
- using an image or a photograph in the text without providing the source.

² The Dictionary of Foreignisms. [online]. Available at <http://slovník-cizích-slov.abz.cz/>



Howard (1995, cited according to Price and Maier, 2010) also warns against **patchwriting**. This is a special type of plagiarism that involves making a patchwork of parts of ideas of various authors that are then presented as one's own. This results in an internally inconsistent text.

The last part of the paper involves its summarisation. This can take various forms:

- The **abstract** comes from the Anglo-Saxon style. It identifies issues and summarises conclusions. It is placed before the actual text or in conference almanacs. Its length ranges between 150 and 200 words.
- The **summary** is a French-style form. Compared to an abstract, it is longer (500–800 words) and also includes arguments.
- An **annotation (a brief description of the work)** is placed on a book's dust-jacket, accompanies information about the book in the expert media, or is presented on the Internet as publisher's information. It is very brief and consists of one to 150 words.
- A **review** is a summary written by another author – a reviewer. In many expert journals, a positive review is a necessary condition for one's text to be published. As opposed to all the aforementioned versions, this form comments on the quality of the entire work and deals with its evaluation in detail. Positive reviews are printed on the dust-jackets of expert books.

9.2 Oral Presentation

The nature of an oral presentation depends on many circumstances and if it is to be effective, one needs to have as many of them as possible under one's control. How does one prepare well for giving a presentation? Price and Maier (2010) first recommend considering the answers to following questions:

- What is the presentation's exact topic?
- Who will be the speaker?
- What is the presentation's purpose?
- For what audience should it be created?
- How long should the presentation be?
- How much room for discussion is there?
- What presentation method will be used?



- Will it be suitable to prepare handouts as well? If so, how many?
- What will the layout of the presentation room be?
- What will the programme of the entire day be? Am I the only speaker or one of many?
- When will I have a mock presentation?
- What are the presentation's evaluation criteria?

With regard to the answers, one should build a **structure of the oral presentation** according to the following framework rules:

1. **The introduction** should neither be shortened nor omitted. It is a mistake to proceed straight to the details. The introduction should not leave out sufficient clarification of the information's context and its sources.
2. **Immediately after the introduction**, it is suitable to mention the context and possible controversies or problems.
3. **Details** – only then can one include information about one's findings, results and conclusions.
4. **Visual support** – the quality and level of the oral presentation can be increased by using visual material. The most frequently used form is a PowerPoint computer presentation using a beamer.
 - *The functions of the images are to arouse attention, to evoke interest, and to support understanding. Therefore, they should mainly contain photographs and figures, diagrams depicting mutual relationships and context, key words, and frequently used phrases. Contrary to this, do not include long text in sentences and pictures that have no connection with the content of the text.*

Your message is now ready and just needs to be **presented**. The way we perform in front of our audience can have a significant impact on how our presentation is received. Experts recommend the following:

- maintain eye contact with the audience;
- briefly introduce yourself to the audience and provide it with the structure of your message;
- adapt the pitch of your voice to the content of the message and do not talk in a monotone during the presentation;



- think about the audience and adapt the speed of your speech to it. Be aware of the fact that the audience may not be familiar with the context that is known to you. Therefore, try to provide information within the context and make sure that your audience can follow you;
- include a personal message, in the form of your own opinion, experience, etc., at the end of the presentation;
- thank the audience for their attention, and ask them whether there are any questions, at the end of the presentation.

The beginning of the presentation and the discussion following the presentation are two of the most dreaded moments and are often accompanied by nervousness. Even though one's self-confidence increases with more experience, the majority of experienced speakers admit to being a bit nervous before speaking. It is recommended that you calm your emotions with deep breathing or visualising someone you admire as a speaker. Having your performance assessed by a classmate can also help. Some 'surprises' in the form of questions during the final discussion can be prevented by guessing what the audience may ask about. However, there will often be a question you will not be prepared for. Do not try to answer immediately; instead, consider it out loud, and if you cannot come up with an answer, admit it honestly.



Practical Application

- **TEST your understanding of plagiarism**

Price and Maier (2010, p. 324) present an activity in their book that helps understand whether and why a text has been plagiarised. Try to evaluate the various text versions yourself. First, the original text is presented, followed by three other versions in which the original was used. Try to determine in which of the three versions plagiarism was committed. Substantiate your evaluations.

Original

Cognitive sources used in the process of writing are important and memory is often overburdened by competing simultaneous operations. The ability to merge information from various sources is one of the basic skills required from students at higher-education institutions. (Price, 2006).



Version A

Cognitive sources used in the process of writing are necessary and memory capacity and remembering are often overburdened by these simultaneous mental operations.

Version B

When studying at a higher-education institution, cognitive sources used in the process of writing are often overburdened by competing simultaneous operations. One of the basic skills needed for studying is therefore information merging.

Version C

As Price (2006) hints at in his research, writing is a complex activity and uses many mental sources. One of the problems is that sometimes the author does not have enough memory, because he/she is forced to do several tasks at once.

COMMENTARY OF THE AUTHORS – TO COMPARE WITH YOUR ANSWERS (cited according to Price and Maier, 2010, p. 341):

Ad version A

A clear case of plagiarism. Despite a few attempts to replace some expressions with synonyms, the structure of the author's original sentence remains unchanged and no citation has been provided.

Ad version B

Also a case of plagiarism. Even though the author changed the sentences slightly and moved the words around, the text is too close to the original and no citation has been provided. In addition, the author does not even use inverted commas, by which he/she would admit that it was another person's text, e.g. 'cognitive sources used in the process of writing', 'overburdened with competing simultaneous operations', and 'information merging'.

Ad version C

This is not a case of plagiarism. This text clearly provides the source of information and suitably paraphrases the original.





Review Questions

1. What activities belong to the preparatory stage of writing a paper?
2. What activities does the stage of actual writing include?
3. What is the BUG method and what is it used for?
4. What average number of written pages can we count on when creating a time plan?
5. What other activities should be taken into account when creating a time plan for the writing of a paper?
6. What parts do empirical papers and non-empirical papers usually consist of?
7. In what grammatical persons can a paper be written?
8. In what forms can information about the text be summarised?
9. What is the difference between an abstract and a summary?
10. What is plagiarism and how can it be committed?
11. What circumstances should be taken into account when preparing an oral presentation?



Summary

This chapter introduces the reader to the important features of written papers. It deals with the paper's structure, style, form and time-planning. The chapter also contains information about the ethical aspects of writing papers and the opportunity to verify in practice whether one understands plagiarism.



Literature

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10 Preparing for an Examination



Objectives

After studying this chapter:

- you will know how to influence your success in examinations;
- through the activity in the Practical Application section, you will become aware of the memory strategies you can employ.

Time Demands

2 hours



Terms to Remember (Key Words)

- action plan
- learning rituals
- personal biorhythms
- self-rewarding
- peer learning
- associations
- mnemonic aids

The process of preparing for an examination is a very complex activity that contains the majority of the already discussed partial skills. In this chapter, we will only briefly mention two aspects of this preparation – strategic planning and working with memory. Let's start with planning. What should we make sure to do before we start studying?

- **Determine the instructor's expectations.** Focus especially on his/her assessment criteria and recommended sources of information. Start with the syllabus for your subject, information from lectures, and information from other students.
- **Create an action plan.** It should include the individual steps that you need to take to learn the text, e.g. visiting the library, copying the material, writing notes, etc. Do not forget revision. Always include enough time, with a sufficient reserve, in your plan.
- **Don't forget your important learning rituals.** Do you have a favourite armchair in which you study? Do you like absolute quiet when studying or do you like to have some music playing in the background?



- **Respect your personal biorhythms while learning.** Have you ever noticed that you can work much better during some part of the day than during others? Do you apply this knowledge when preparing for an examination? You can save time this way.
- **Reward yourself for working.** Don't forget to work with your motivation. Reward yourself, for instance, with pleasant activities (a short stroll, listening to music) for partial steps and try to adhere to your action plan and maintain self-discipline by using rewards.
- **Be in touch with your classmates.** They can be a source of feedback about your progress, a source of other valuable information which you may not have caught at lectures, and a source of support and motivation.

Once we have an action plan, we need to work with the subject matter so that we can reliably and, if possible, permanently **remember** it. How should we do this? To remember read information, its mutual relationships and summaries better, it is recommended **to work with it as deeply as possible, to understand it, and to suitably visualise it.** What in particular can be recommended for better remembering?

1. **Work with key words and the main ideas** – select the most important terms and organise the subject matter around them.
2. **Organise information into charts, mind maps and graphs** – this is a very useful way of expressing the essence of often quite voluminous and complicated subject matter in a relatively small space.
3. **Create your own associations for remembering relationships and context** – a list of terms, names of parts, or a sequence of steps that need to be remembered; we can try to 'connect' them through a story, places on a path known to us, etc. By involving fantasy and visualisation of a path or a story, connections are created that we will remember well.
4. **Use colours and other visual aids** – this is also very effective. Psychologists confirm it with information about the functional specialisation of the brain hemispheres: by transforming text into a picture or a diagram that we highlight in colour, the right (creative) hemisphere, which is often neglected, is involved in our learning. This



increases the capacity of our memory and our performance is much higher.

5. **Have discussions with colleagues and the instructor** – this enhances the remembering of (expert) terms, supports their suitable use, and helps summarise and integrate gleaned information. Discussion can be recommended as a suitable method during seminars or at any occasion.
6. **Revise the subject matter already several hours after learning it** – to remember more lastingly, the revision of smaller amounts of subject matter at more frequent intervals is preferred. The highest amount of forgetting usually takes place in the first two days after learning.
7. **Use the questions in the textbook** – we have already mentioned the significance of questions. We do not have to make up all the questions ourselves, as many study materials already include them. In addition, they are usually focused on the facts the instructor emphasises and therefore poses during an oral or written examination.
8. **Peer learning** – to revise the subject matter, it is useful to use a different point of view, in this case a friend's. One can do a 'mock' exam, explain the subject matter one doesn't understand well, point out discrepancies to the other, etc. In addition, one can help the other lower his/her level of tension and stage fright before an examination.



Practical Application

TEST YOURSELF

The following table summarises the various methods for strengthening one's memory. Become aware of which of them you use and how often.

Table 12: **Test – What Memory Strategies and Mnemonic aids do you Use?** (freely according to Price and Maier, 2010, p. 219).

Memory Strategy	Yes/No
Mind maps, diagrams and graphs	
Associations – perceiving relations between pieces of information	



Writing down information	
Remembering information with the help of lists – sorting the order of words on the list so that their first letters make up some silly word – mnemonic aids	
Using frames and colours	
Repeating the information by saying it to yourself silently or loudly	
Displayed on a poster	
Various magnets on the fridge	
Dividing information into different sections	
Creating stories about the given facts	
Cards with summarising information	
Anything else that helps you	



Review Questions

1. What circumstances contribute to effective preparation for an examination? Which of them can be influenced and planned ahead of time?
2. What can we do to remember information better? Which principles from various theories on learning can we apply (see chapters 3 and 4)?
3. What memory strategies do you know?
4. How can we support visualisation of the subject matter?
5. Do you have any study-related rituals? What are they and how do they help you?
6. What does 'peer learning' mean and how can it be useful?



Summary

The chapter briefly summarises the recommendations for effective preparation for an examination and for supporting one's recall of read subject matter.



Literature



- KAHN, N. B. *Jak efektivně studovat a pracovat s informacemi*. Praha: Portál, 1998.
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11 Development of Social Skills



Objectives

After studying this chapter:

- you will know what you can learn from your peers (classmates/colleagues), and how and what to avoid;
- you will be able to distinguish a group from a team and to describe the rules of team co-operation;
- you will have recommendations for working on your own social success during examinations.

Time Demands

2 hours



Terms to Remember (Key Words)

- peers
- team
- social behaviour
- non-verbal communication

11.1 Peers and Groups

In interactions with others, you undoubtedly receive a great deal of different information. This form of mutual learning is ubiquitous. However, given the amount of all the present stimuli it is useful to be able to recognise relevant and useful information that you can apply yourself in the future. For instance, you can use the following evaluation techniques:

- **Evaluate the information obtained in terms of its inclusion in the area of your interest** – if you can use it practically, keep it; leave aside all information not related to your field of interest;
- If the information obtained from another person is valuable to you, **actively seek out related information to paint a complex picture;**



- **Get inspired by the learning techniques employed by others** that make others' learning easier, and test them on yourself (to determine whether they suit you as well);
- **Take notes** – even though it may seem that the information obtained from dialogues with others is so 'clear and natural' that you will remember it, writing it down will make you certain;
- **Create lists** of what was good for you and others while learning – when in trouble, you can solve similar situations in an analogical way;
- **Remember that others' techniques for success don't necessarily have to work in general** – always look at others' methods as possibilities, not as ready-made solutions, and always test their 'efficacy' on yourself first;
- **Repeat subject matter in groups** – this is one of the most effective strategies to remember subject matter and evaluate one's knowledge.

Another possible method of mutual enrichment and learning is working in a team. A **team** is a new quality. It is a group of people working together on a task and striving for the achievement of a goal. The entire task is divided into sub-goals that individual team members work on. Thanks to this organisation, individual members depend on each other, as the task can only be completed through mutual co-operation.

As opposed to an individual, a **team** can resolve very complicated problems for which one person would have insufficient capacity.

Co-operation with various people is a natural part of our activities and is good preparation for your future employment. Therefore, it is worthwhile to already start developing it now. How can we determine whether our group is a functioning team?

1. Team members are identified with goals;
2. Team members have their roles divided so as to use their individual strengths;
3. Team members bear a joint responsibility for the goals in question;
4. Team members plan together how to achieve the determined goals;
5. The division of tasks for individual team members is fair and everyone agrees with it;
6. Team members can manage their time;



7. Team members respect each other;
8. Team members trust each other.

It is obvious that working in a team has some indisputable advantages. However, creating a team requires an intentional effort. According to leadership experts, the leader should keep in mind **three groups of goals: achieving the goal, creating and maintaining the team, and the individual needs of team members.**

To **achieve the goal**, it is necessary to:

- introduce the entire task to all team members;
- assign a certain role and responsibility for a certain activity to each team member;
- create a plan of activity fulfilment;
- recognise the team's strengths and use them to achieve the goal;
- gradually verify team performance according to the plan.

To **maintain the team**, Adair (1999, cited according to Price and Meier, 2010) recommends:

- encouraging all team members to achieve the goals;
- paying attention to effective communication among all members;
- not omitting the development of the skills of each individual;
- maintaining discipline in the team;
- creating team spirit;
- listening to each other.

With regard to **an individual's development**, it is recommended to pay attention to:

- the skill of recognising one's own abilities and their use;
- the provision of help and support to others;
- gradual provision of feedback;
- the encouragement of introverted team members to be more active;
- the expression of respect to all team members.

11.2 Working on One's Own Social Success During Examinations



An examination is also a social event and its result will, apart from your knowledge, also depend on your skill at presenting this knowledge and on your social conduct. What social behaviour should you focus on?

- **Support your self-confidence.** The basic prerequisite for your best possible performance during an examination is to be confident in your own abilities (see self-efficacy). A person with healthy self-confidence always gives a better impression than a 'bundle of nerves'. Do not rely on the examiner's mercy. Recall situations that you mastered in the past and learn from them. And do not forget that you also communicate non-verbally!
- **Think positively.** Approach the examination with the idea of passing it, not failing it. In answering the pedagogue's questions, focus on what you know and do not emphasise what you do not know. In your internal deliberations, express confidence in yourself. View the examination as a challenge and an experience, not as a burden and a trauma. Do not cast yourself in the role of a 'pupil', but of a 'student'. Your internal mood is also significantly reflected in your performance and affects the impression you give. And others having a good impression of you is the first step towards success.
- **Don't lie.** If you really do not know the answer to the questions, it is better to admit your ignorance. It is often comical or embarrassing if you try to 'guess the answer' and it unnecessarily worsens the impression of your performance.
- **Have evidence for your claims.** When it comes to a situation in which you and the instructor do not agree on the answer, it is good to know where you got the information in question. It is always better if you have evidence for your claims. If you got the information you are defending from hearsay, its value probably won't be too high. If you have evidence for your claims (e.g. 'As Doctor Křivohlavý says in his book *How to Cope with Stress*'), you can defend your claims more easily.
- **Do not give up without a fight, but do not quarrel.** You will certainly get into a situation during an examination in which the answer is not completely clear. If you are convinced about your claim or opinion and can explain it appropriately, do not give up. Discussion during an examination is not a mistake and many times it can be enriching. However, remember that a discussion does not involve only obstinate insistence on your opinion, but also the submission of arguments in favour of your statement!



- **Trust your feelings.** We need to remind ourselves that even teachers are human beings. This means that in your interactions, you cannot avoid liking/disliking them, emotions or 'human error' during the assessment. You will then more easily 'sense' what is suitable for a given situation. Even this 'sensitivity' can significantly influence how others assess your performance.

Apart from verbal communication, i.e. the content, we also communicate non-verbally. **Non-verbal communication** often reveals more than words. Therefore, during an examination, a job interview or another similar situation, think about it being in accordance with what you are saying. Otherwise, you will give an untrustworthy impression. What should you focus on?

- **Sit upright** – you show your self-confidence this way.
- **Maintain appropriate eye contact** – do not sit with your eyes looking down; look the other person in the eyes and in the face from time to time and communicate with your eyes.
- **Restrict unnecessary involuntary movements, but do not be stiff either** – both these body positions hint at nervousness and uncertainty.
- **Do not be provocative.** It is good to know how to dress for an examination or a job interview and how to make yourself up so that your appearance looks natural and dignified. Forget eccentricity with the intention of attracting attention. Your gestures and 'poses' should not be unnatural or provocative either.
- **Do not let your smile be hidden by possible nervousness or fear.** If you smile from time to time (even though you do not feel like smiling at all), the other person will perceive it as a friendly gesture. Others will then take a liking to you more easily.
- **Speak fluently, at an appropriate pace; do not mutter and do not shout.**
- **Pay attention to your tone of voice.** The pitch and tone of your voice helps the other person know what we feel about him/her. A contemptuous or fearful tone in your voice will get you negative points.
- **Always talk to the examiner.** You are telling him/her 'I'm talking to you', 'I'm talking with you'. Do not jabber your knowledge to yourself, communicate it!



- **Listen carefully.** It is a dialogue! If you talk too much, the other person will probably evaluate it as a lack of interest. And you probably do not want to give that impression in this situation!



Practical Application

- **TEST YOURSELF:**

Many times various problems need to be resolved. How would you cope with the following problems?

Table 13: **Test – What Is Your Relationship with Teamwork?** (freely according to Price and Maier, 2010).

Problem in the Team	How Would I Solve It?
1. There are always a few lazy people in the team whose work in the group has to be done by someone else and they are just along for the ride.	
2. The pace of the team slows me down and it makes me upset.	
3. I don't like the topic our team should be working on and I'm scared that I won't be able to keep up with the others.	
4. Some team members sometimes do not complete their tasks (at all, on time).	
5. In some cases, the work in the team is not divided fairly.	
6. Sometimes you are forced to work with students who do not care what grade they will get.	

Recommendations and tips for resolving the aforementioned situations:

Ad 1: Establish basic team rules. Agree on the measures that will be taken against those who do not complete their work on time. Adhere to the rules if such a situation comes up!



Ad 2: Talk about this with other team members, as it is possible that you are mistaken. Be open to each other and honestly evaluate the contribution of the entire team.

Ad 3: Inform the team about your uncertainty and say what you are really good at and what you can offer.

Ad 4: Find out where the basic rules have been breached and ask that the situation be remedied!

Ad 5: Try to avoid creating sub-groups in the team. Each team member should have a feeling of importance.

Ad 6: Determine whether these members are aware that all the others depend on them. They should inform the rest of the team about their decisions. This can again be a case of breaching the basic rules and must be remedied.



Review Questions

1. In what ways in terms of learning can there be mutual enrichment among classmates?
2. What is a team and how is it different from a group of people?
3. According to what criteria can we recognise team co-operation?
4. What are the advantages of team co-operation?
5. What are the principles of team development?
6. What should one focus on in one's own social conduct during an examination?
7. How can non-verbal behaviour influence our assessment by pedagogues during an examination?
8. What type of non-verbal behaviour contributes to our appearing trustworthy during an examination?



Summary

The chapter provides stimuli for working on the development of one's social skills related to studying. It focuses on the rules of verbal and non-verbal communication. It introduces the reader to the advantages of peer support and help and the principles of team co-operation.





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12 Development of Emotional Stability



Objectives

After studying this chapter:

- you will have an overview of how to prevent stress during an examination;
- you will know what you can do if stress has already set in;
- you will have stimuli for the long-term development of your own ability to cope with stress.

Time Demands

2 hours



Terms to Remember (Key Words)

- stress
- distress
- stress prevention
- fear
- stage fright
- panic
- breath control

Stress prevention

From the survey presented in Chapter 2 it appears that examination-related stress is quite a common study problem among students. **Stress** in the negative meaning of the word (**distress**) is a burden which begins to get out of our control and which has a counterproductive effect. One can cope with stress effectively, but it cannot be completely eliminated. It is more about trying to prevent it and to eliminate its negative impact. How can this be done? Within the framework of stress prevention, one can already do much in the actual **process of preparing for an examination:**

1. **Motivate yourself towards ongoing learning** – do not just learn 'ad hoc';
2. **Plan your learning** – see time management;
3. **Study in a focused way** – restrict any disruptive influences in your environment and do not become unnecessarily distracted;



4. **Study in a suitable environment** – suitable and sufficient lighting, suitable temperature, well-ventilated room, satisfied biological needs;
5. **Use your time at school as much as possible** – attend lectures and seminars and take careful notes (and sort the information already during them);
6. **Work effectively with the study literature** – i.e. 'learn to learn' to search in the library system, on the Internet and in online databases; to use registries and annotations; and to search using key words;
7. **Train your memory** – use computer programs focused on the development of cognitive abilities and participate in courses (e.g. Feuerstein's programme of instrumental enrichment).

Acquiring and applying the aforementioned techniques will lead to more effective preparation. And don't forget: *Chance favours the prepared mind* – being well prepared equals less stress during a performance and also during an examination.

Stress situations

If stress has already set in, you can try one of the following techniques:

- **Control your breathing** – sometimes it is enough to breathe in deeply and to breathe out to calm yourself down; this technique can always be used when we feel anxiety or tension, can be repeated several times, and can be used almost anytime and anywhere without others noticing it. So – inhale, exhale and here we go!
- **Focus** – before our performance, we not only need to calm down, but also focus. We should not unnecessarily distract ourselves, which includes the often used chatting with classmates about 'how much of the subject matter I don't know'. If you are the target of these (or similar) sentences, step aside and focus on yourself. You will feel relieved. For this purpose, for instance, you can use the technique of internal speech. It primarily helps to keep one's attention on the task ahead. At the beginning of one's work on the task, the student can think: 'This will be difficult. It is necessary to pay attention to what the teacher is saying.' When the student notices during his/her work that his/her focus is slipping, he/she can think: 'Stop thinking about ... You need to focus on what the teacher is saying.'
- **Cope with 'sudden panic'** – it can happen that despite all your attempts to calm down and focus intently, you may panic when you are



asked your question. Now it is good to listen to your body, to inhale and exhale again, to try to relax as much as possible, to leave the assignment for a moment, look around the room, and only then return to the question or assignment.

- **Eliminate 'fear of the teacher'** – yes, even during university studies you can encounter pure 'fear' of the examiner regardless of the subject matter and whether you have prepared for the exam, whether the situation is caused by the fact that the professor is an authority for you or whether you 'have already heard of him'. It is said that examiners are just people. Many times, it is enough to get rid of your excessive and irrational fear by imagining them as people in their birthday suits. If we sit down with a pounding heart in front of the entire examining committee, we can see them as 'just people' or even as 'fleas' that cannot harm us more than by just biting us a bit. And that is not so bad!

Fighting stress over the long term

Stress also accompanies our actual long-term preparation for an examination, e.g. the term exam and exam period. The level of stress in the individual periods can depend on how successful/unsuccessful you are during learning and on how quickly/slowly the examination approaches. To cope with the long-term emotional burden, we can – apart from the aforementioned methods to make the preparation more effective – also use the following techniques that are employed over the longer term:

- **Regular physical activity** – even in situations where we are intensively preparing for an examination, we should not forget regular physical activity. It keeps us healthy and in good condition, releases tension, fights stress, and contributes to our overall mental well-being.
- **Enough sleep and relaxation** – apart from the physical it also helps the mental. If we are not tired, we can focus better, learn more effectively, remember more (rest affects memory storage), and perform better. Forget learning from the morning to the evening (as well as from the night until the morning) and relax!
- **Eat regularly, do not overeat, drink enough water, and avoid alcohol** – you will reach your goal more easily and keep yourself fit.
- **Moderation!** – stress situations often provoke our subconscious tendencies to 'exaggerate', be they overeating, starving ourselves, intense studying without breaks, underestimating or overestimating



ourselves, drinking alcohol, taking sleeping pills, etc. If we realise these tendencies, we will be more successful in 'reining ourselves in'. This maintaining of ourselves in a seeming 'greyness and boredom', however, will bear fruit. Just try it!



Practical Application

▪ TEST YOURSELF:

Evaluate yourself with the following four statements and give a score to their validity according to the following rules: 1 = rarely, 2 = sometimes, and 3 = always.

Table 14: **Test – Do You Suffer from Stage Fright?** (freely according to Price and Maier, 2010, p. 185)

Characteristic Features of Stage Fright	My score: 1–3	Solution Plans
1. I have a terrible feeling that someone will be looking at me.		
2. I have a feeling that others will think that I am stupid.		
3. I am afraid that I will forget what I want to say.		
4. I am afraid that I will lose the thread and will get entangled.		

Recommendations and tips to remedy the above situations:

Ad 1: As soon as you establish contact with your audience and start looking at them, this feeling will almost disappear. Try to imagine how you feel when you are talking to someone. If you do not look at the audience, this feeling will get stronger.

Ad 2: This is a problem with your self-confidence. Think about the fact that you have rehearsed your presentation several times and that you have prepared well.



Ad 3: This is also a case of low self-confidence and of something that you are afraid of when you are in stress. If you rehearse the presentation several times, you will master the topic.

Ad 4: This happens when you are in stress. Perceive your presentation positively, not like it is the world's biggest catastrophe. Maybe you will not say everything exactly as you wish, but no one will take notice of it. If you have a clear structure, there will be no confusion.



Review Questions

1. What is stress in the form of distress?
2. How can we prevent it during our preparation for an examination?
3. How can we try to suppress negative emotions that have already been evoked (e.g. stress, fear, stage fright or panic)?
4. How can we develop our emotion stability over the long term?



Summary

The chapter offers recommendations for working with negative emotions during one's studies, which particularly include stress (distress, fear, stage fright or panic). It distinguishes between preventing these emotions and influencing them in the situations in which they are present, and it also suggests ways to work on one's long-term emotional stability.



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