

Educational Elements and Motivation

Abstract

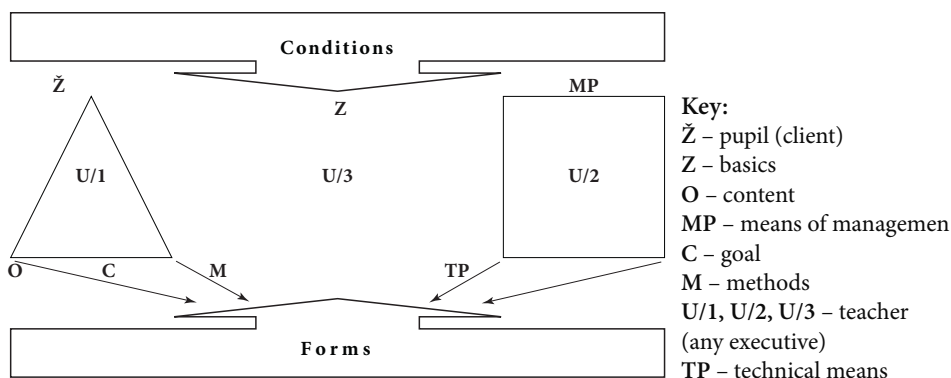
Motivation is an important condition to win, hold and develop pupil's activity in the teaching process. That is why we consider it useful to inform students of teaching professions about the possibilities how to utilize particular elements of education for motivation of their future pupils.

Key words: *elements of education, motivation.*

There is a system of elements in the formation-educational process (Scheme 1), out of which either each one independently or in combination with additional ones, support motivation.

The goal of this contribution is to feature the basic motivation functions of the educational elements and processes which arise out of the combination of elements.

Scheme 1. The structure of the elements of education

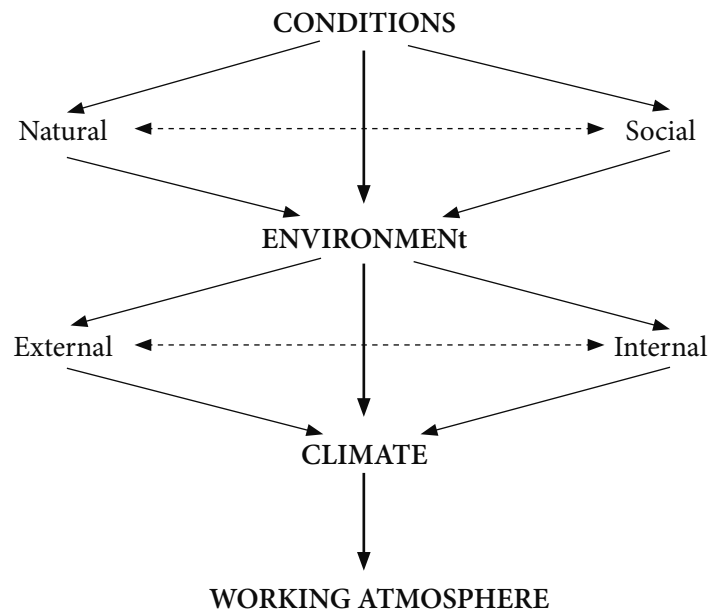


It is clear from the above – shown system of elements that some elements are in a superior positions to others (Ž – O, Ž – C, Z – M, and the like), while others are in an equal position (O – C, M – TP, O – C – M – TP). Keeping this in mind is important both from the point of view of formation of all processes (curriculum exposition, its fixation, diagnostics and so on), and also from the point of view of motivation in particular.

The conditions of education

In a given system, a dominant position is occupied by conditions under which the teaching process is implemented, under which both pupil and teacher work. The author of this work perceives the structure of conditions in the following way:

Scheme 2 The structure of motivationally important conditions



Every human society finds itself in unforced (natural, geographic) conditions, under which it creates economic and other prerequisites necessary for human existence (social conditions).

By shaping the natural and social conditions the environment is formed:

- in which man lives (family) and works (school, working place), e.g. *external*,
- and forms his human (*internal*), demographic, socio-cultural, and other environment that enables him to carry out his goals and interests.

Under the influence of the environment a climate originates, which is based on *relationships* among society members (between parents, parents and children, among siblings, pupils, pupils and teacher(s), and so on).

The climate supports the formation of working atmosphere. In it, under the influence of the intellectual background of class pupils (parents' education and preparedness to bring up their children, professionalism of teachers, and adulthood of pupils) *communication contacts* are formed, through which work, work activity, teaching, learning, and the like, are immediately provided for.

Out of the mentioned condition levels, each stage holds its meaning from the point of view of motivation. Most generally, objectively, naturally given conditions are *geographical ones*. A man living in certain geographic conditions perceives them as a natural part of his life. He realizes the influence of conditions only when they change; for instance following a move from any mountainous area to lowlands where he lacks hilly areas, typical flora and fauna. In an opposite way (from lowlands to a mountainous area) he has to cope with a hilly landscape. He has to change his lifestyle, motion, and the like. Geographic conditions used to influence, and they partially still do, the formation of human settlement. The alpine localities are less populated by people of a specific ethnic group. A bigger concentration of inhabitants is found for instance around rivers, and in lowlands. In the same way, we can perceive the influence of geographical conditions from the point of view of the latitude. For comparison it is enough to identify the features of the people living in the equator area with those living in the proximity of the north or south poles. They created basic socio-cultural conditions that they considered necessary for life.

Within the described conditions, man tries to create such an environment that enables him to do a whole complex of activities. One of the important environments created intentionally by a human being, is the educational environment. The educational environment can be identified in a family, school, extra-school facilities, informal interest groups (peer groups), subject commissions (teachers), and in other professional formations (surgeons, school directors, and the like).

We distinguish external and the internal educational environments.

At school and in a further educational environment the *external environment* has a strong influence. For instance, the school location, neighborhood arrangement, and the access to it affect as a primary, though only formal, stimulus. Both parents and pupils are motivated differently by a housing estate school located among residential buildings near a busy street, and a school surrounded by neat verdure, a tidy school yard, safe access roads, and the like.

From the point of view of motivation what is also important is the *internal* – physical, ergonomic environment (ergonomics examines the relations of man and work and working environment), which immediately surrounds man. Here we can point to, for example, the classroom shape (narrow – long, short – wide) that conditions teacher's proximity. From the psycho-hygienic and motivation point of view, the colour harmony of the classroom (the colour of the wall, floor, board, and other equipment of the classroom), the furniture construction (especially the shape and size of benches, chairs, their mobility), classroom lights, and the like, is important. The internal environment is shaped by the school employees (director, his deputy/deputies, teachers, and instructors, technical-administrative and other workers).

Environment creates primary preconditions for the work of pupils, parents, and teachers (lecturers). It enables them to work with a curriculum and ensures the learning itself. It creates situations in which individual skills of all process participants are employed.

The *climate* in the educational environment is shaped on the basis of interpersonal relationships. From the motivation point of view, it is important to keep in mind that interpersonal relationships can be:

- long-standing (e.g. among parents, between parents and children, among siblings), short-term (between teachers and pupils, and between pupils and other workers in a given environment).

Long-standing relationships, typical of a family environment, create sets of inputs that are reflected in human mind. Harmonic relationships among family members, supportive stimuli that affect a child's personality and are linked to formative education, create, together with genetic preconditions, the climate in which an individual develops, it means, he/she accommodates to the lifestyle and needs of the family. In a family, a child recognizes and accepts mechanisms that enable him/her to make contacts with the closest ones. He/she learns his/her own auto-regulative mechanisms that help him/her integrate into the society of family and later, into the society of peers, and the like.

According to J. Vaněk, as quoted by J. Hroncová (2001, pp. 74–75), a family can, from the point of view of the *quality* of stimuli, offer the child stimuli that are either poor, or replete, or optimal. From the point of view of *quantity* stimuli can be one-sided or defective. Every stimulus kind involves elements that are important also from the motivation point of view. For instance, an unfriendly environment can damage both the rational and emotional part of a child's personality. Based on these stimuli, a child acquires defective attitudes, prejudices that later make it more difficult to join the society of peers. In an emotionally poor environment, an emotionally cold and apathetic child develops that is motivationally little or dif-

difficult to access, which clearly makes the work of teachers and instructors hard. In a society of peers such child can show to be an aggressive, malignant individual.

Short-term relationships are typical by variability and dynamics of climate formation for the contact among subjects. For example, a child playing in a sandpit can be motivated to make contact with another child on the basis of an attractive toy. The contact comes to an end when a new, more attractive toy appears in the sandpit. In a later period, the contact can be based on the compensation of the need, interest or shortage. If this need disappears, the contact is interrupted either temporarily or for a longer period of time. Exposed contacts are based on concealing the need, the interest among peers.

Contacts within clearly given time and space are also relatively short-term, for instance during a lesson. Each contact is caused by a certain stage of interest, need, and the intellectual background of the class. Pupils can be motivated by the content of the subject they like. Motivation can be short-term (for a certain theme only), medium-term (for a thematic unit), long-term (for a school year), or perspective (for lifetime). A positive climate for work, which is linked to positive motivation, can be developed in pupils especially by the teacher's personality, by some of his/her personality characteristics, for example by his/her appearance, age, clothing, and gender. Older pupils judge and relate to the teacher in a broader context. The first one is his/her professional and human characteristics, e. g. knowledge, righteousness, objectivity, ability to understand some imperfections in the preparedness for lessons. In many cases, pupils are motivated for good results because they want to keep their position in front of the teacher of the society of their class. For competitive and confident pupils to fail means to lose their position among schoolmates, and that is why they are always active, in spite of partial failures.

The climate at a lesson is created by the *working atmosphere*, too. The ground of the working atmosphere is communication. Where communication is based on mutual respect of rights and duties among the communication participants (parent – child, teacher – pupil), atmosphere of mutual trust creates. A motivationally positive atmosphere is created by smooth, appropriate loud speech, helpful mimics and gestures. The said predispositions are important not only from the motivation point of view but also from the point of view of the steering style of each process.

The following factors influence the formation of the working atmosphere:

- In families, where an authoritative educational style prevails, a “loud” atmosphere dominates. Children in there get accustomed to vociferous uproar. They transfer this style of communication to their school environment as well. By their behaviour, they create a competitive atmosphere, in which individuals push through their own interests. They expect the same teacher's approach

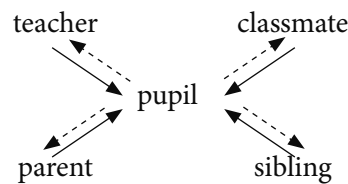
and communication as they experience with their parents. They cannot accept a teacher's moderate approach. They react to a sharp voice only, which, however, disturbs other pupils.

- The atmosphere in a family with an autocratic upbringing style supports a formation of an aggressor that holds a tendency to victimize his/her schoolmates.
- In a school environment an important role is played by the ratio between transitional and determined time. If the transitional time (the time between activities) is disproportionately long, pupils are relatively passive. Their activities are influenced by impetuses that do not flow from the concept of a lesson. Pupils do not do activities that they are expected to. On the other hand, if pupils are active in the determined time (the time specified for activities), they are overburdened. Such stage was observed for example during a long examination. At the beginning of the examinations, pupils were able to independently work without greater divergences, and they reacted to the teacher's interventions (questions) substantially well. As the time went on, they gradually lost their orientation in the examined matters. We disclosed a similar situation during written exams at university. If students had a disproportionately long time to work out their answers, they showed a tendency to confront their answers with others or in their answers they did corrections by which they did not improve their original answers.
- The communication contacts between pupils and the teacher are important for a lesson. A pleasant working atmosphere is lacking in such lessons where pupils' activity is based on reactions to teacher's questions only. A requirement to answer the uttered question only with a limited possibility to express one's own opinion does not positively motivate. According to some respondents, such a lesson limits their personal freedom.
- In lower grades of elementary schools pupils are negatively influenced by overexposed gesticulation of teachers. Pupils frequently have experience with physical punishment in their family, and in reaction to teachers' uncontrolled gesticulation they sidestep and fear.
- The working atmosphere is created up by the physical proximity of the teacher as well. When a close contact between teacher and pupil is not inevitable (pupil does not ask for individual help), teacher's proximity affects intrusively. The pupils of both elementary and secondary schools also react negatively to the teacher's movement around the class, for example during written tests. They are especially disturbed by the movement from the rear to the front wall. They reject this movement also during lesson presentation because the teacher disappears from their field of vision.

- Pupils value the work of an optimistically behaving teacher who trusts their pupils and is able to solve difficult situations as a detached person, smiling. According to what pupils say, it is difficult to work with a teacher whose facial expressions are of low dynamic offering no support particularly during individual activities (e. g. when answering). Pupils are motivated by an approving nod or a signal that provides for a basis of a correction of their activity.
- From the observations which we made it is clear that pupils positively evaluate such an atmosphere which gives them a chance to confront as well as consult the opinions on the ways of solving tasks with a schoolmate who they respect or with their teacher. Such an atmosphere is created by, for instance, group teaching with a heterogeneous structure of pupils in a group.

The above-mentioned shows that pupils are positively motivated by such an atmosphere that respects a child's (pupil's) personality where communication plays a supportive role. The following is an example; the model of radial communication:

Scheme 3. The model of radial communication



The explained model points to the pupil who has a possibility to make a communication contact with a participant who suits him/her within a given context and actual time. In accordance with this model a pupil chooses a communication partner who is upright, whom he/she understands, they can accept one another and share the same values. Based on these conditions, a supportive working atmosphere enables and motivates pupils to act. Through this atmosphere the pupil's position in the class (family) modifies and shapes his/her self-confidence.

The content and goal of education

A further element, which is important during a lesson from the motivation point of view, is the content of education (curriculum) and its goal; these should be equivalent in the system of basic elements supporting each other's position

(Scheme 1). A curriculum is a vehicle of elements working in pupils as incentives. Through motivation in the teaching process, the internal need (goal) is synthesized with incentives. This harmony is not difficult to reach within those processes where pupils inwardly accept as necessary to master the curriculum, to work with it. A more complicated situation appears when a curriculum becomes a frustrating barrier. If the teacher identifies this situation (a parent can help identify of this situation, so can an educator in a school club), he/she does not support motivation by the content and meaning of the curriculum itself but by the goal that flows out of the curriculum or out of the process of embracing it (learning). Reaching even a partial goal is success and it can positively influence the pupil.

In the expounded context motivation is complicated because the pupil is under the influence of two intertwined kinds of incentives (content, goal), which, however, the pupil perceives differently; they have a different meaning for him/her. Motivation must be grounded in such an incentive, which is nearer to a pupil's inner needs. It can also be a goal – not to get a bad mark or retake a test. The experiences from exam retake confirm this fact. In many cases a pupil is able to inwardly cope with the necessity to pass an exam. In this context a harmony of the goal and inspiration plays an important role. In the relation: aspiration and goal, especially the structure of the advanced goals is important. For younger pupils more immediate goals are especially meaningful; for older pupils near, distant, and perspective goals can be combined. In reaction to a goal, processes arise that conceal tendencies leading to reaching the goal, to completing the task. Assigning homework in maths can serve as an example. If the assignment of homework is based on a possibility to choose an example, the conditions for pupils' active work at home are made. The pupil looks for an example possible for him to do. The tendency to reach goal, is clear. Pupils that lack self-confidence, choose a simple example. They must decide which one will be simple. Undone examples will evoke in pupils a system of tensions that will further motivate them to return to the discontinued activity, to seek an opportunity, which will give them a chance for success. Following the task fulfillment, the tension will be released and the concomitant hardships will weaken.

The work with content can be accompanied by a fear of failure. Failure can lead some pupils to various changes in their behaviour. Beside lower self-confidence, a pupil ceases to trust the teacher. He/she can start breaking the school order. Giving various pretexts he/she may eschew lessons. He/she may discover truancy, many times accompanied by activities that are in conflict with the law and so on. Other pupils may experience that their fear initiates an endeavour to avoid failure. It may lead pupils to orderliness and discipline. Fear can appear as a result of expected punishment (in a home environment a physical one, too). Even though we do not

consider punishment to be an appropriate means of motivation, it can be effective in combination with a reward. The effect of punishment will do if it is implemented immediately after the evaluative act. It is considered to be a better means than unconcern or an indifferent approach to a pupil. The pupil, however, must understand that his/her formation is not based on punishments and also, that he/she can rightfully expect a reward for good performance.

It is very important for teachers and parents to know that while working with pupils they will experience not only good results but also errors. A mistake, error in the work with content may present deficiencies on both sides, that of pupils and that of teachers. These are always identification means which are worth attention. It is necessary to find out **what** initiates a mistake and **why** such situations appear. If an erroneous performance repeatedly appears on pupil's part under the influence of the same algorithm, it is necessary to pay attention to the algorithm itself. An inappropriate algorithm and following it failure can change a pupil's attitude to the curriculum, subject, and learning to his/her disadvantage. The pupil consecutively loses his/her interest in work, resigns and ceases to learn. It is therefore meaningful to find out not only the level of knowledge (ignorance) but also algorithms that initiated it. Those can be for instance curriculum extent, its structure, intricacy, and so on.

According to L. Maršálová (cf. Ďurič, L. 1967) a teacher should process the content in such a way that the followings emerge non-violently from it:

- meaningfulness, curriculum sense,
- information on possible connection with the curriculum of another subject (frequency of the contact with a phenomenon),
- similarity with another curriculum whose structure pupils have already master.

According to J. Skalková (1999, p. 156) an emotional attitude to a curriculum can be achieved by communication through an act. In the manipulation with the content of curriculum there can be hidden incentives initiating curiosity and following activity to reach a concrete, appropriate goal. (Krystoň, M.–Sabolová, G., 2003, pp. 36–37) From the educational as well as motivational point of view it is important that the goals are monitored and consistent. (Krystoň, M – Sabolová, G., 2003, p. 37)

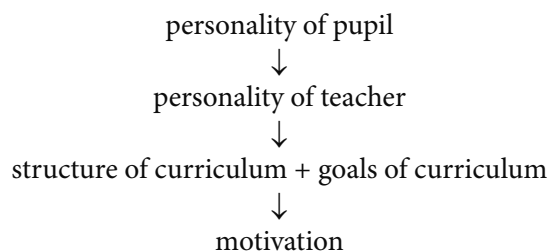
At the level of the content and goal (Scheme 6), there are dynamizing elements, methods, and technical means that are important not only from the educational but also from motivational point of view.

The methods of education

Methods as dynamizing means provide for not only the content and way of the work with a curriculum, but they also activate human acting. Through them the application attitude between content and goal is solved, it means **HOW** to work with the content in order to reach a goal, or **HOW** to reach a goal through a given content. From the question **HOW** certain tensions, or seeking of the unknown, result. There are elements in it that initiate *interest* in an activity, provide for certain *needs*, influence one's will, form *attitudes and values*, are able to influence *aspiration* of the one who acts.

We consider methods to be external influences that are reflected in internal conditions. Since internal conditions are unique for each human being, a reflection of the same method is different for various people. The word addresses one person in a form of a challenge while another in a form of an instruction or an order. One is more open to information conveyed to seeing, another one to hearing. One is eager to know details, another one wants to know the context.

Behind each mentioned alternative of work there are a number of various methods. The use of a certain method in the process of education viewed from the motivation aspect is complex also as to the relation to methods. One set of methods is acknowledged, respected, and used by the teacher, another suits the pupil. Therefore the choice of the method that will be useful as far as motivation and educative aspects are concerned belongs to ambitious activities of the teacher. Unambiguous determination of the appropriate method, which will always be functional as to the described aspects and the prospective subject, and the actual theme, is not possible. Universal methods do not exist. However, the basic approach to the selection of methods is known:



This structure is shaped up by further elements that are shown in Scheme 1.

Methods viewed from a motivation aspect must be considered also as to their possible function. A method can develop or add the content of education by a component whose absence cannot be easily identified in the curriculum. An attrac-

tive method can give a new shape to a less attractive subject. Besides, it is also necessary to pay attention to innovative methods. Innovation can, according to M. Tuma, as quoted in M. Krystoň, (Krystoň, 2003, p. 47), be understood as any change in the structure of human personality. M. Krystoň (2003, p. 47) lists innovating methods in *adult education*:

- 1st – 3rd stage of innovation: lecture,
tutorial,
seminar,
- 4th – 5th stage of innovation: problems methods,
situation methods,
stage-manage methods,
- 6th – 7th stage of innovation: brainstorming,
Gordon's method,
Hobo method,
Phillips 66,
Altšuller method,
comparison,
aimed questions,
morphological modeling,
play.

At the *elementary and secondary* school, innovation of the 1st – 3rd stage can be secured by methods that are closer to this age category. Those are mainly clarification, discussion, demonstration, training, and the like.

Verbal methods secure a natural contact between teacher and pupil. An appropriate construction of *clarification and discussion* provides for not only information supply, but also for formation impetuses of expressional conditions of pupils. If the said methods utilize pupils' experiences, and are supported by experienced events, they are appropriate methods also according to the motivation point of view. They are accessible to all age categories.

In the cases when a curriculum is difficult as to the structure of elements, and pupils' experiences are insufficient, it is right to motivate pupils by a combination of the clarification method with the demonstration (methodical turnover).

Demonstration not only shapes up words but also enables pupil's penetration into the new dimension of phenomena not known so far; this is inevitable to experience especially for the pupils of younger school age. The described methods are confirmed by older pupils in the quality of their knowledge and skills, which stabilizes their system of knowledge and skills; this also strengthens their self-confidence.

From the motivation point of view a similarly important role is played by the methods that belong to the group of practical aspect like training, exercising, and drill. Their common feature is their ensuring pupils' direct activity, mediation of factual contact with reality, manipulation with real elements.

Training is a presentation method; it provides for the contact of pupils with a phenomenon, with a curriculum. For example, the first grade elementary school pupils learn the shapes of letters, they train how to put together phones making syllables and words both when writing and reading. Through training pupils learn particular gymnastic elements during the lessons of physical education. Training helps learn activities that a pupil has never done before. In each of the mentioned activities there is a cause of tension that the pupil wants to reduce or even remove. Tension motivates pupils, it creates and supports a certain kind of activity.

Training strengthens and, fixes the learned activities. At the same time, it links particular details into a broader context. For instance, by training pupils read words using syllables (they syllabify), they no longer divide a word into phones. Through longer practice of they come over to read words without syllabifying. At physical education lessons they link elements to larger units until they master the whole piece, and so on. The result is a fluent activity (reading, interpretation of a piece). Pupils compare who reads faster and who still syllabifies. The comparison of performance positively pupils' influences activities. *By training* the learned activity is maintained and elaborated, which is manifested in the whole performance and that is why it is an important internal activating element (internal satisfaction).

Every method is a carrier of motivation elements. It is important for a teacher to recognize their structure in order that he/she is able to offer pupils and to use methods that will be effective from both the didactic and motivation point of view.

The characteristics of some methods from the didactic and motivation point of view:

- *Brainstorming* (idea market) is a method that provokes participants to formulate a maximal number of spontaneous ideas. Through open presentation of ideas, the thought activities of participants are conditioned for new ideas. The motivation aspect is in the spontaneous acting free from fear of failure.
- *Brainwriting* is one of the forms of brainstorming. The difference is in the way of releasing ideas. At brainwriting ideas are written on paper sheets. Finding a problem solution is implemented by conversation. Motivationally positive influence comes through a possibility to confront one's own opinions with others, without of from consequences of bad results.
- *Gordon's method* is based on seeking one solution. A problem is dealt with from various angles. Opinions are gradually bound up to a selection of a

dominant problem that is solved. This method is motivationally effective thanks to pupil's discovering of so far unknown or less known approaches to problem solutions.

The above mentioned methods are appropriate for older pupils and adults.

- *Play* is a method which uses seeking, it initiates creativity. While playing a space is opened to organize activities both of one's own and of other participants. In this way the pupils get certain experiences how to lead. Games with rules support self-discipline, self-control. It is possible to say that a game on the one hand supports activity while on the other hand it softly and spontaneously leads to a certain activity. In the same way we can characterize stage-manage, simulative, and situational methods as well as dramatization wherein play and playfulness is the basic element. They support the detection of new solutions, new relations, and therefore they are attractive as well as motivationally interesting.
- *The method of experiments and failures* is not frequently defined in the didactic literature. It is characterized by a tension and endeavour to actively approach a task solution. Every successful experiment ends up with joy and further activity. If a pupil finds a small ground for a successful task solution in his/her failure, or if he/she is supported by his/her environment (teacher, parent), he/she remains active even after a few unsuccessful activities. This method is less effective for unstable pupils who are negatively motivated already by a slight failure.

Technical means

Technical means of teaching can be found at the level where they are able to support didactical methods, make the content of education real, and thus make the teaching process in which goals are reached more effective (Scheme 1). They are closely linked to the tenet of visualization that has to do with sensual perception, with actual activity and abstract thinking. This procedure is the basis of future deduction, in fact, for some pupils it shapes their abilities to inductively think and deductively act.

In the system of technical means a meaningful position is taken by *teaching* tools that are carrier of information. The information is taken in by sight (87%), by hearing (9%), and by other sensual organs – olfactory sense, touch, and taste (4%).

Every learning tool, particularly visual tools, attracts attentiveness and brings in a change into the teaching process. It is clear from our observations during pedagogical experience that a higher percentage of pupils can ignore verbal information while just a minimal percentage of them can avoid visual stimuli. The latter arouse interest, motivate pupils to observe. The source of stimuli need

not be a complicated system of visual tools. In many cases pupils can be inspired by a textbook or a magazine. These are the tools that are available at home as well. The intensity of observation, the quality of work, and the motivation to act increase if pupils have a possibility to confront questions with models and reality. The level of confrontation is supported by the words of teachers and by the experiences of pupils.

Organizational forms

The rise of the organizational forms of education is influenced by the content, methods, technical means and goals (Scheme 1) that teachers coordinate in accordance with pupils' presuppositions and conditions available (Scheme 1). As to the motivation, the organizational forms are important because working atmosphere is created by them, which directly influences pupils' activities.

Mass teaching

According to J. Skalková (1999, p. 205), there is a persistent place in the school practice for *mass* (frontal) teaching with a system of teaching units (hours). Its functionality is supported by pedagogical, didactical, psychological, sociological, and economic aspects. From the motivation point of view mutually linked interpersonal contacts among the curriculum participants are important. At a lesson there is a mutual influence of activities. A motivationally meaningful role is played by teacher's organizational and leading activities. If teachers master to use individual capacities of pupils, their activity for their own development, they motivate to work not only individuals but also intentionally, or sometimes unintentionally they motivate activity of all pupils.

Because frontal teaching has limited possibilities to influence pupils and the present didactics prefers especially activities of individuals, forms that respect pupil's individuality are considered as motivationally appropriate. These are for example:

- differentiated teaching,
- group teaching,
- project teaching.

Differentiated teaching

Differentiated teaching creates such a working atmosphere in which every pupil has a chance to find his/her own most appropriate educational activities. In accordance with the psycho-didactic theory of B. S. Bloom, differentiated teaching will be motivationally effective when pupils are given such time space that they need to learn a curriculum at their own pace. B. S. Bloom comes out of the information

that every pupil is able to master a set of knowledge providing he/she has sufficient time for it. It is important to realize that some pupils get good results in a longer period of time which should be filled by sufficient feedback information that supports pupil's activity. In this context, teachers must keep in mind that it is not good to equalize the pace of work of particular pupils because the result is criticism that acts motivationally negatively.

A differentiated approach to individuals can be made available through e.g. *group teaching*. Every group makes up a certain society in which such interactive relations are made that support successful work of individuals. (Kasíková, 1997) The reached results positively influence also the work of those pupils who had not been distinctively active in a given period of work. They recognize the ways of the task solution followed by their classmates. They have a possibility to realize in which activities and for which reasons they are dependent on the help of their classmates. Even more active pupils understand the meaning of cooperation and help to less active classmates thus realizing the ground of responsibility for the results of the group work and of individuals. They take control over their own leading activities that can play either a positive or hostile role in task solution. The success of the group is a positive stimulus for outstanding pupils as well, which usually are work organizers (leaders).

Cooperative teaching

The cooperation of pupils in groups is supported by *cooperative teaching*. According to H. Kasíková, as mentioned by J. Skalková (1999, p. 211), the outcome of the work of individuals is supported by the activity of the whole group, and the whole group uses the successful activities of individuals. It is the counterpart of competitive teaching, where the success of an individual is linked to the failure of another. Cooperative teaching motivates pupils to mutual help and tolerance. It teaches pupils to understand opinions of others; it positively forms the skills to evaluate their own work as well as that of others.

Project teaching

Project teaching applies to the solution of complex theoretical or practical tasks. It opens up space for the synthesis of knowledge and practical experience that pupils acquired in various subjects and contexts. The basis of project teaching is made by a discussed and accepted plan of activities to solve a task. There are given strategies with tasks for individual pupils in the plan. The plan is open for the public, the task fulfillment is regularly checked and evaluated; that is why pupils are motivated to seek important information for the solution and implementation of the task (project). Such a project can be for example: Which factors negatively

influence the school environment? Pupils can set areas of observation, for instance:

- from the environmental point of view,
- from the pupils school discipline point of view,
- from the point of view of an ineffective use of school interior, and the like.

The evaluation of the gained information is motivationally important. Results can be publicly interpreted in front of class pupils, school, parents, and so on. By making results public pupils present their results of work and see the meaning of their activity, but the reached positives make pupils to keep order within the school campus and activate them to further active approach to shaping and protection of the environment.

Individualized teaching

If we assume that there is a part of pupils in the class who show little activity during lessons in spite of activating methods, it is necessary to create such pedagogical situations for them that respect the specifics of weaker pupils, for the completion of which they could be positively evaluated. (Zelina, 1995, p. 52)

The goal of positive evaluation is to give pupils moral satisfaction, to support their confidence in their own strengths, and to evoke their longing for building up the reached goals. The reward can be understood as an educational means. The basis of rewarding is made up by the link of good work with a pleasant experience, which appears through the satisfaction of some need.

Problems teaching

In comparison with the teaching where the basis is formed by information-receptive methods (traditional teaching) problems teaching, differs by the structure of activities. During traditional teaching pupils are given tasks whose solution is known, and through convergent processes they are to work towards an unknown result. During problems teaching pupils know the result but do not know the way leading to solution, the assignment need not be transparent. The problem solution is based on divergent processes. Looking for the way of solution, discovering the entries into the solution, and problem solution are motivationally significant. The *entry*, *way* of solution and the *result* are variables in the problems teaching. Each variable can have two forms. It can be open (O), then there can be more solutions or the solution is closed (Z), and the variable has only one form. By the combination of variables the difficulty of the problem is determined. A problem where all variables are closed is the least strenuous:

- entry – closed
- solution – closed

result – closed.

An example:

Entry: Basic mathematic operation is *counting*. Find *two* figures, whose summation gives the known result. The entry is closed because the kind of mathematic operation is given (summation), the number of summands is given and the result is for instance 6.

Solution: Solution is closed because the math operation (summation) as well as the number of summands (two), by means of which the given result should be reached. The possibilities to solve: $0+6$, $1+5$, $2+4$, $3+3$, $4+2$, $5+1$, $6+0$.

Solution: Through the given math operation and the given number of summands the result should be reached (sum) 6.

A medium strenuous task is represented by variables, where one is open, and two are closed. The problem can be outlined in three ways:

T1 Outline of variables in the problem

	1st possibility	2nd possibility	3rd possibility
entry	open	closed	closed
solution	closed	open	closed
result	closed	closed	open

A higher stage of strenuousness is reached by outlining the variables so that in one series there are two open parts. For example if the closed variable remains 6, the entry as well as the solution (math operation) will be open. Pupils find the figures and that way of solution which leads to a given result. Beside summation pupils can look for a solution through subtraction (difference), for instance $7-1=6$, $8-2=6$, $10-4=6$, but also $100-94=6$. Pupils must take into the equation such minuend and subtrahend from which they deduce the expected difference. The information pupils' on thought processes is important for the teacher; it can help him/her understand pupils as to how they sought the entries into the example solution as well as the way of solution. The given result can be reached also through multiplication and division. All ways are correct.

The most strenuous level is in the alternative where all variables are open. For example, find numbers and ways that are the solution of the equation. The assignment has no concrete entry, nor a way of solution, nor an expected result. The goal of such assignment is the reconstruction of the equation that pupils are able to solve.

The presented examples show that looking at the matter from the point of view of motivation such an alternative is appropriate which suits the possibilities and experience of pupils.

Bibliography

- Boroš J.: *Motivácia a emocionalita človeka*. 1. vyd. Bratislava: 1995. p. 183.
- Ďurič, L.: *Pedagogická psychológia*. 2. vyd. Bratislava: 1991.
- Ďurič L., Grác J., Štefanovič J.: *Pedagogická psychológia*. 2. vyd. Bratislava: 1991. p. 331.
- Helus Z.: *Pojetí žáka a perspektivy osobnosti*. vyd. Praha: 1982. p. 196.
- Hrabal V., Man F. Pavelková J.: *Psychologické otázky motivace ve škole*. 1. vyd. Praha: 1984, p. 254 p.
- Hroncová J., Hudecová A., Matulayová T.: *Sociálna pedagogika a sociálna práca*. 2. vyd. Banská Bystrica: 2001, p. 300.
- Hudecová A., László K.: *Základy didaktiky*. Žilina: 1992, p. 95.
- Kačáni V.: *Osobnosť žiaka vo výchovnovzdelávacom procese*. 1. vyd. Bratislava: 1983. p. 155.
- Kačáni V.: *Úvod do pedagogiky*. 1. vyd. Bratislava: 1974, p. 158.
- Kačáni V., a i.: *Základy učiteľskej psychológie*. 1. vyd. Bratislava: 1999, p. 214.
- Kasíková H.: *Kooperatívni učení, kooperatívni škola*. vyd. Praha: 1997. p. 147.
- Kováč D.: *Teória všeobecnej psychológie*. 1. vyd. Bratislava: 1985, p. 338.
- Krystoň M., Sabolová G.: *Úvod do andragogiky a psychológie dospelých*. 1. vyd. Banská Bystrica: 2003. p. 108.
- László K.: *Teória a prax vo vzdelávaní učiteľov*. 1. vyd. Banská Bystrica: 1996, p. 144.
- László K.: *Všeobecná didaktika*. 1. vyd. Banská Bystrica: 1997, p. 88.
- Madsen K. B.: *Moderní teorie motivace*. vyd. Praha : 1979, p. 468.
- Maršálová L.: *Psychológia učenia*. In: Ďurič L., a i.: *Základy psychológie pre stredoškolských profesorov*. Bratislava: 1967.
- Mojžíšek L.: *Vyučovací metody*. 1. vyd. Praha: 1975, p. 264.
- Pardel T.: *Motivácia ľudskej činnosti a správania*. vyd. Bratislava: 1977, p. 219.
- Peterssen W. H.: *Učebnica všeobecnej didaktiky*. vyd. Bratislava: 1993, p. 199.
- Petlák E.: *Všeobecná didaktika*. 1. vyd. Bratislava: 1997, p. 270.
- Pietrasinski Z.: *Psychologie správného myšlení*. vyd. Praha: 1965 p. 238.
- Skalková J.: *Obecná didaktika*. 1. vyd. Praha: 1999, p. 292.
- Tollingerová D. a i.: *Programové učení*. 1. vyd. Praha: 1966, p. 189.
- Višňovský L.: *Vybrané kapitoly z teórie výchovy*. vyd. Zvolen: 1993, p. 117.

Višňovský L., Kačáni V. a i.: *Základy školskej pedagogiky*. 1. vyd. Bratislava: 2001, p. 227.

Zelina M.: *Alternatívne školstvo*. 1. vyd. Bratislava: 1993. p. 35.

Zelina M.: *Stratégie a metódy rozvoja osobnosti dieťaťa*. 1. vyd. Bratislava: 1995, p. 163.