

## THE COMPARISON BETWEEN THE BEHAVIOURAL AND CONSTRUCTIVIST LEARNING AND TEACHING

### USPOREĐIVANJE BIHEVIORISTIČKOG I KONSTRUKTIVISTIČKOG UČENJA I PODUČAVANJA

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#### *Abstract*

The difference between the behaviouristic and constructivist approach to learning and teaching originates from different notions of knowledge. Currently in Slovenia the behaviouristic approach dominates as it is present in the whole educational system and teachers are more familiar with it. Those teachers who have different notions of knowledge are introducing a changed approach to learning and teaching that follows from the constructivist paradigm. Both are facing dilemmas that concern teachers in practice more than they do initiators of changes who do not work directly in practice. The consequences of the introduction of changes include different notions of evaluation, examination and assessment. From a didactic point of view the role of feedback changes as it is transferred from assessment to examination. From a student's perspective, it is not the role of feedback that is essential but its meaning.

#### *Sažetak*

Razlika između biheviorističkog i konstruktivističkog pristupa učenju i podučavanju proizlazi iz različitog poimanja znanja. U Sloveniji trenutno prevladava bihevioristički pristup učenju i podučavanju, jer ga učitelji najbolje poznaju, a bio je prisutan i u cijelom obrazovnom sustavu. Oni učitelji koji drugačije vrednuju znanje, uvode promijenjen pristup učenju i podučavanju koji proizlazi iz konstruktivističke paradigme. Oba pristupa se suočavaju s nekoliko dilema koje su više prisutne među učiteljima u praksi, nego kod predlagatelja promjena koji ne rade neposredno u praksi. Posljedice uvođenja promjena uključuju različita tumačenja vrednovanja, provjeravanja i ocjenjivanja. S didaktičnog pogleda uloga povratne informacije se mijenja. Njeno težište se prenosi s ocjenjivanja na provjeravanje. Za učenika nije bitna uloga povratne informacije već njeno značenje.

#### **Introduction**

A tendency for an introduction of changes to practice occurred in Slovenia a few decades ago. It originates from a different notion of knowledge /1/. From the new approach to learning and teaching a different definition of goals, evaluation, examination and assessment follows. The role of feedback changes, it gains a new meaning for the students. Despite desires for the introduction of the constructivist approach to learning and teaching, due to subjective assessment in practice, the behavioural approach still dominates. It is my belief that a certain amount of criticism is needed whenever assessing any approach as some areas of knowledge are just remembering or recognizing something without necessarily understanding, using or changing it (the

first level in Bloom's taxonomy) and are directly related to reproductive style. One should keep in mind that in school children of a very wide range of abilities can be found. If to some being directed and supported suffices, others need a very clear structure of learning and teaching accompanied with leadership and immediate straight-forward feedback.

In order to decide how to guide a student towards their goals, a reasonable question to ask would be: Can we assess what and how much a student already knows, what they are capable of and which goals they are able to accomplish? Feedback that is often used because of didactic recommendations and demands only serves its true purpose if a teacher knows a student's personality.

## 1. Learning and teaching between behaviourism and constructivism

The Slovene professional domain is equipped enough with works of both Slovene and foreign authors for teachers to find information on how to execute a certain method in class if they wanted to. A class could go from static to dynamic, from the learning-target approach to the process ones.

In a hierarchic school system teachers find themselves torn between different demands and recommendations. Marentič Požarnik /2/ says that a teacher receives some sort of "schizophrenic" orders: "You should accomplish certain goals in students, such as lasting and useful knowledge or the development of creativity and critical thinking. You are completely free in your choice of methods that will lead students towards those goals, but at the same time you have to achieve certain standards of knowledge in a given time frame. Those standards are going to be tested with examination and the results will be crucial while assessing the quality of your work and the possibilities of further studies of your students."

If in given situations teachers choose a behavioural class that is because it is a safe and tested way to get to the goal. The role of a teacher changes in the constructivist approach to learning and teaching /3/. But for every introduction of changes time and professional basis are needed and only teachers who perceive themselves as competent can introduce them.

### 1.1. THE BEHAVIOURAL APPROACH TO LEARNING AND TEACHING

Psychologists who work with children with special needs use behavioural techniques combined with cognitive when necessary. Nowadays in the Slovene professional domain behaviourism is looked down upon as an ancient theory for which there is no room in the modern notion of knowledge and the development of a student's competences. That relationship is not critical enough and too one-sided when it comes to children with learning difficulties. They need a very clear structure, instructions and leadership accompanied with immediate and understandable feedback.

Different principles of classical and operant conditioning are efficient if one is well acquainted with them and uses them for a certain purpose. It is not to be feared that the behavioural approach would not enable development and training of skills whenever possible. Mostly it is deduced from the wrong hypothesis that behaviourism is a drill that affects a whole personality. But let us look into the use of those principles in a slightly more

optimistic fashion.

Most are familiar with classical conditioning, a principle of positive reinforcement in operant conditioning (e.g. praise of a teacher or peers) or a principle of negative reinforcement (a student develops a new form of behaviour: avoidance, escape). In the behavioural approach to learning and teaching a principle of punishment is mostly avoided due to the consequences that can hardly be predicted. A principle of extinction, however, is frequently applied incorrectly (e.g. ignoring acceptable forms of behaviour instead of unacceptable). But there are more principles in behaviourism that can efficiently be applied in order to help a child reach a desired goal.

When dealing with learning letters at the very beginning of schooling it is necessary to develop reactions to suitable prompting. A principle of prompting can rarely be found in expert literature from a domain of learning and teaching, even though it is used all the time. Prompting serves as an antecedent stimulus that helps cause the desired response /4/.

A part of behavioural teaching is also mastery learning that originates from a hypothesis that most students can master their learning target, given enough time and a suitable class. A teacher should divide more broad topics to smaller units and then examine the level of knowledge unit by unit. If a student does not learn it, a further explanation is needed. Children in one class learn at a different pace, therefore forming them in groups according to their pace of work is one solution. Some people, however, do not recommend that method.

The behavioural method is efficient when predispositions for learning are bad (e.g. insufficient previous knowledge, low intelligence, increased anxiety). This statement has been proven by Weinert and Mandl /5/. Furthermore, it has been added that open situations of learning which set high demands for the construction of new realizations to student's abilities have proven themselves to be more efficient when predispositions for learning were more suitable. Feedback directs a student in a way that says "you are on the right path / you are on the wrong path ". This kind of feedback is needed by some students as "read again and think about it" confuses them. If a teacher were more familiar with behavioural approaches to learning and teaching that are significant for education, they would be more likely to understand a student's behaviour in different situations and, consequently, be able to help them.

## 1.2. THE CONSTRUCTIVIST APPROACH TO LEARNING AND TEACHING

Constructivist learning and teaching is based on active processes and the construction of knowledge that originates from learning by doing. If a child is exploring and is being active during the process of learning, it cannot be claimed that there is one form of knowledge only. At this point a problem of both theoretical and practical nature arises. Piaget presumes that every teacher is bound to assess the previous knowledge of their students in order to determine on which level of thinking the student is located and where to continue with the development of new processes that would influence schemes and, consequently, structures. Piaget /6/ suggests an intentional creation of cognitive conflicts as they bring out activity in thinking processes in order for a child to reach equilibrium through a process of adaptation. Needless to say, the tasks must not be too demanding, otherwise, according to Piaget, a child will not be able to solve them because they have not yet developed suitable structures. Vigotski, however, claims that a child can solve tasks using help.

Vigotski /7/ categorizes skills according to problem solving. He establishes three categories:

- skills which a student cannot perform,
- skills which a student may be able to perform,
- skills that a student can perform with help.

Help is needed at the beginning of learning for developing suitable strategies. A teacher offers to a student support in the form of hints, encouragement, dividing a task up into smaller units... That represents the process of "scaffolding". Long /8/ describes, "that an adult supplies initial support to enable children to construct their understanding, and that this support is then withdrawn when they have independent abilities."

Later on a child will be able to solve problems on their own or, according to Piaget, even help other children, Vigotski also mentions the zone of proximal development. A child will accomplish a task given if we help them suitably.

As we are dealing with the development aspect of learning and teaching, knowledge must be measured through formative examination and not summative assessment /9/. Over the last ten years a portfolio has been tried to be put in practice. Regarding assessment as a whole, a portfolio is a carefully formed collection of a student's results that offers an image of what a person/student can do /10/. Formative assessment is enabled by a development portfolio where we measure individual progress through a selection of results. Here, feedback is of an essential meaning and student is actively included in assessment. The result and reflection represent

feedback to the teacher. And what can it represent? Maria Elawar and Lyn Corno /11/ found »that feedback was dramatically improved when teachers used these four questions as a guide: What is the key error? What is the probable reason why the student made this error? How can I guide the student to avoid the error in the future? What did the student do well that could be noted?« From a teacher's point of view, the problem with a portfolio is the increased amount of work and, from a professional view, forming suitable criteria (descriptors) for each task as each result is measured separately. At this point, psychometric characteristics of validity and reliability have to be pointed out.

## 1.3. THE DILEMMAS OF TEACHERS IN PRACTICE

But the problem with examination is not as easy as it may seem. The reasons for this are regulations about examination and assessment which are rather one-sided and obligatory. Moreover, from a legal standpoint they are the only criterion for the assessment of a teacher's work in case of a complaint. That is a well-known fact among all teachers.

Logonder discusses the problem of assessment and examination as they are both the same thing. Here, another reasonable set of questions arise: Where is knowledge? Would an expert who assessed credibility of questions in a test really appreciate those questions which provoke complex thinking? How shall a teacher assess such a task?

Another problem of examination and assessment are errors. In the behavioural approach, on the one hand, they are rather disturbing, but in the cognitive constructivist approach, on the other hand, they are almost necessary as they represent a step closer to the answer. Now one is dealing with a new problem: Can a teacher determine the level of thinking development for every student and intervene soon enough once the wrong development of structures is found? Vigotski claims (Moshman, 1997, Palinscar, 1998, in Woolfolk, 2002), that a child's cognitive development is encouraged by interactions with people who are more skilful and dominate in their thinking, e.g. parents, teachers. That is where Vigotski differs from Piaget who stresses the meaning of peers who are able to provoke suitable ways of thinking in a child. There are many useful interactions taking place between them. There is another hesitation from the developmental approach: If students have had mainly or only experience with behavioural learning and teaching in school, a lot of a teacher's energy will be needed to activate adolescents who are in the third, fourth year of high school and have a tendency to rest. Even those teachers with a great

amount of knowledge are returning to traditional methods of teaching, securing their role as a teacher. In my opinion, it is best if a teacher performs the method in the way that they master. By doing so, they keep their autonomy and reassure their own efficiency and the level of a student's knowledge through feedback. The introduction of changes interfered also with a teacher's competences and that directs them towards lifelong learning. Even though changes in learning and teaching processes are necessary, all processes of the school system have to take place in harmonised way. If students with high results on external examinations are wanted, one should teach differently from when thinking processes with no basic knowledge are about to be developed. But maybe there is a way to prevent one form of knowledge excluding another. Stefanc /12/ deals with an artificially created problem of transmission or transformation in a way that he concludes transmission is immanent for transformative approach.

## 2. Critical assessment of behavioural and constructivist learning and teaching

Critics often blame behavioural learning and teaching theory to be too focused on achievement. They claim that students pay too much attention to the learning process because of external motivation instead of processes themselves. External motivation in itself carries both advantages and disadvantages, where traps are set mostly for teachers. If a teacher uncritically praises a child, there is a great danger of the child decreasing the results. Even more delicate is punishment, which is a principle that needs to be mastered before being used. The reason for it is that in the class there is not only the student to whom a response is directed but also everyone else in the role of spectators. Both parents and experts have a lot of complaints about group punishments (Epanchin, Townsend and Stoddard, 1994, Jenson, Sloane and Young, 1988, in Woolfolk, 2002). Criticism applies also to praises/punishments of an individual in a group. That can be problematic not only because of the means of communicating the praise/punishment but also the fact that a praise/punishment which is directed towards one individual disregards the influence on the rest of the group. When speaking about the application of the behavioural methods, ethical questions cannot be avoided. It is my opinion that a problem of using the behavioural techniques lays also in the lack of knowing the behavioural theory /13/ as we can find descriptions of certain techniques in handbooks that tend to lead a teacher to quicker solutions. Mostly, the problem is not the theory and the use of its results but an individual. A teacher should be aware that the use of techniques is not universal.

While choosing a behavioural technique, one should realize that what may be efficient for one child, may not be for another and vice versa. The behavioural learning processes leave some room for a student's passivity as the reproduction of data may be encountered. Whether a student is going to be active or not, depends on intrapersonal processes and not on the method itself. The behavioural theory uses objective methods and stresses the measurement of one's own achievements.

Activity of students during class is being stressed in the constructivist paradigm; therefore, for students classes are interesting and pleasant. But those students who have difficulties understanding the rules of behaviour, can find numerous opportunities to escape the active learning space during teamwork. The critics of constructivist learning and teaching are warning about inner relationships among the members of a group where few students take the leadership role and summarize the results of a group while the submissive ones are forced to accept the choices of the stronger ones. During an active class students learn with understanding. It should not be forgotten that even in a class where active methods are used many children do not know what the point/goal of the class was. Regarding constructivist teaching, one is dealing with a great transfer of knowledge as they can transfer knowledge from one taught situation to another. Students prove their knowledge through different means of learning and, consequently, develop different competences.

Authentic tasks provoke exploring and curiosity. But in our area, handing out a task in the form of homework represents a great risk. The task may be solved or it may be not. A student's activity during class develops processes of self-regulation, reflection, self-reflection, communication. They train their skills of searching the suitable literature; they develop critical and creative thinking. A difference may be noted also in the criteria of assessment. Feedback is needed in the function of encouragement, support, and scaffolding. Criticism applies to the rejection of measurement of knowledge as some researches show that students have lower basic knowledge of skills than those in the classes of traditional teaching (Concept to Classroom, in November 2006). Furthermore, teachers have a different role. The responsibility for teaching falls both on a student and teacher and for that reason the teacher's role is more of a mentor. Teaching represents a greater challenge to the teacher and their preparation for classes takes more thinking activity as they must always predict plan b and c. The teacher develops some competences that would be harder to develop in traditional class. The constructivist approach should begin at an early age (Piciga speaks about the successful introduction

of science to pre-school, 1995). If later on that kind of teaching method ceases children become more and more passive.

Some children who need clear structure do not follow the constructivist method of learning and their knowledge is consequently not successful enough. At this point children with special needs have to be pointed out as they are the ones who are trying to fulfil the minimal standards of knowledge.

## Conclusion

Students often ask whether they need to know something for a test, whether they will be graded on it, why they need to know this and why not that. They do not care much about the answer that they will know more. Knowledge is a value. Students who learn because of external motivation will find it very difficult to be active during learning and teaching that develops cognitive processes and allows satisfaction. Constructivist learning and teaching should begin at an early age; it should be a method of communication, exploring the surroundings and development in general. The elements of behaviourism would be integrated to the constructivist notions when necessary in well-thought and target-setting situations. The opinion that all old teaching methods are bad and that new which are good should be introduced (after all, experience is gained from abroad) is extreme and among the Slovene teachers it mostly hits rejection rather than approval. Active methods of teaching brought a wind of change but every teacher should critically assess for themselves which methods they are going to adopt and which not. A student's perception of a teacher's role is of crucial importance as students frequently act in accordance with their own assessment of the teacher's personality and understand feedback accordingly.

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