INTELLIGENCE AND LANGUAGE LEARNING

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Introduction

Pedagogy and psychology are the subjects that are ones of the core subjects of the teacher training education. Based not only on my own prior personal knowledge it seems that teachers-to-be do not fully realize how especially those subject are important for their future career.

Pre service teachers consider the major subjects to be most important and what can be considered to be even more depressing and gloomy is that students study most subjects separately without looking for the relations that definitely exist among them. The fact is that it is also a problem of those who are responsible for preparing the study programs, as there were several researches conducted about the proportion of pedagogy, psychology, teaching practice and so-called “major” subjects (see e.g. Turek, 2001).

Psychology and pedagogy should be at least of the same importance as the major subjects are. Frequently the general core subjects are considered as those of less importance. However, the contrary is the truth. If one wants to be a successful teacher they must be good psychologists ready to understand the students, to understand the process of learning and to be able to consider all the factors affecting learning/teaching process and thus to make it more effective, smooth and successful.

One of the factors that influence the teaching/learning process is the intelligence. Studying how intelligence has been perceived during the years is very interesting.

Intelligence definition

If we ask an average person today Who is an intelligent? the most frequent answer would be Somebody who knows how to behave. Asking the question Who is an intelligent person? – we would get the answer The one who has a lot of knowledge. However, the psychologists would provide us with different definition or definitions. Most of them agree that it is “the ability for complex thinking and reasoning” (Ceci, 2001, ¶4). Detterman (2005) includes in the definition also the skills gained during the human being’s life concluding that intelligence refers to “a general mental capability to reason, solve problems, think abstractly, learn and understand new material and profit from past experience”. Gardner (In: Willingham, 2004) adds another factor, namely culture describing intelligence as “a biopsychological potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture”. There are also voices that social competence is an important component of intelligence as well as that intelligence should cover also the creativity. Piaget defines intelligence as "an adaptation...To say that intelligence is a particular instance of biological adaptation is thus to suppose that it is essentially an organization and that its function is to structure the universe just as the organism structures its immediate environment” (Piaget, 1963, pp. 3-4, In: Plucker, 2004).

Theories

As it can be seen various psychologists define the term psychology in different depth and breadth. This naturally results in different typologies and categories of the intelligence.
In the early 1900s Charles Spearman found that “tests of mental ability were positively correlated” (Detterman, 2005). He introduced $g$ – the concept of general intelligence that underlies all intellectual tasks and mental abilities. The second factor he identified is $s$ – specific factor that is “related to whatever unique abilities a particular test required, so it differed from test to test” (ibid).

In 1938 Louis Thurstone postulated that intelligence is a set of independent factors and these are equally important (compared to Spearman’s $g$). He identified seven primary mental abilities: verbal comprehension; verbal fluency; number, or arithmetic, ability; memory; perceptual speed; inductive reasoning; spatial visualization.

Raymond Cattell and John Horn applied new methods and concluded that there are two kinds if general intelligence (some of the definition in the introduction reflect it). They distinguish between fluid and crystallized intelligences. While the fluid intelligence represents the biological basis, the crystallized one can increase during the human being’s life and it represents the knowledge and skills obtained through learning and experience. If we had mentioned that crystallized intelligence increases during the life, then considering the fluid intelligence it increases to adulthood and then declines due to aging process.

The latest popular trends in the Intelligence theory present Howard Gardner and Sternberg. Stating that Gardner’s theory of multiple intelligence types is one of the latest is not totally right as it was introduced in 1983. Introduction of the originally seven intelligence types – linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, intrapersonal and interpersonal was later added and the eight intelligence was introduced in the late 1990s - the naturalist one. The ninth one, the spiritual one is under investigation. The theory was accepted and is still very popular but on the other hand there is a lot of critique of Gardner’s theory, especially about what can and what should not be called intelligence. Some psychologists suggested talking about aptitudes or talents rather than intelligences (e.g. Bruner).

The triarchic theory of intelligence was proposed by American psychologist Robert Sternberg in 1980s. He suggested three parts of intelligence: analytic (reasoning and solving), creative (up to now it is impossible to measure creative intelligence) and lat but not least, the practical intelligence (skills in everyday living).

In 1990s Peter Salovey and John Mayer suggested that the emotional intelligence is a complementary type to the type of intelligence measured by IQ tests. Daniel Goleman “expanded the concept to include general social competence” (Detterman, 2005).

As one can see, psychologists study the intelligence and apply different approaches to test IQ. Modern intelligence test no longer compute scores using IQ formula – mental age /chronological age*100. Originally, the first IQ test was written to identify children who would have problems with formal education in France. Modern intelligence tests “give a score that reflects how far the person’s performance deviates from the average performance off others who are the same”.

The aim of the teaching process

Not only the psychologist but the teachers as well should be aware who the students in the classroom are. For the teacher it is an important information as one can help the students with not only providing the (encyclopedic) knowledge but by involving the students in the learning/teaching process using the advantage of knowing the type of intelligence (aptitude, talent), learner’s style and to help them with using learning strategies effectively (see Straková, 2003).
Here we should ask and answer the question – What is the aim of the educational process - to teach or to help the students to learn? To give them knowledge or also to influence their personalities? Discussing the definitions and the theories of intelligence we showed that the intelligence can be influenced by stimulating and motivating environment. Similarly, IQ is affected by schooling. Thus, the knowledge and skills gained at schools should help the students to develop thinking and reasoning.

“Many students could learn more effectively than they do now if they were taught in a way that better matched their patterns of abilities” (Sternberg, Grigorenko, 2004, p. 274). A lot of books are being published lately on how to teach children to learn, how to teach and learn effectively at school, how to apply cognitive, metacognitive and social strategies in learning, how to make the students to think and not only to memorize and repeat the data and facts. We cannot expect that change comes immediately. We have to start with the pre-service teachers, to how them that it can be effective, they have to experience it and than we can expect that will try to apply it in their teaching practice.

“The question is not how smart people are but in what ways people are smart” (GARDNER, In: TRAUB, 1998). We can argue that what Gardner discuss in his theory are not intelligences but we all realize that every person is unique and perceives the life and information that come in different ways. As CHEN states “the goal of education is not to teach multiple intelligences, but to see them as tools to help achieve educational goals” (In: McGUIRE, 2004). This should be the rule for all the teachers. To think about the learner as about the unique human being that from his or her nature wants to learn, to be creative and involved. In case the creative teacher wants his/her students to be creative, autonomous, using different strategies in learning process he/she must to present the material in a way the student likes it. All the ideas seem to be natural, however in practice the teachers do not test their students intelligence types, learner’s styles, they do not discuss the students with the psychologists and thus most of the teachers, most of us based on our teacher’s belief want all our learners to study in a way we are used to, or even the way we were taught.

**Language learning and multiple intelligences**

The research on foreign-language learning ability (GRIGORENKO, STERNBERG, & EHRMAN, 2000, In: Sternberg, 2002) reported that the scores on dynamic tests (where one learns at the time of test) “correlated more highly with a test of foreign-language learning ability (the Modern Language Aptitude Test – MLAT) than with a test of general ability. Scores also significantly predicted success in foreign-language classrooms at the U.S. Foreign Services Institute (FSI), an institute for teaching languages to foreign-service officers and military personnel.”

The study skills are very important in the student’s life. This can be supported also by STERNBERG and GRIGORENKO (2004, p. 275) claim: “When students think to learn, they also learn to think.” Thus implementing learning strategies in the language learning, as well as the students’ cognizance of them, has its irreplaceable position in the learning/teaching process.

This means that teaching needs individual approach and specially at the beginning of the schooling when students form their learning habits. It means that students should be presented various ways of work with text, words, etc. so they can find the way that works best for them. “Any concept worth teaching can be approached in at least five different ways that, roughly speaking map onto the multiple intelligences” (GARDNER, In: TRAUB, 1998).

Here we would like to present the possible activities that could help the students to present their intelligences, talents and to learn the presented material in an interesting way for them.
We use the text form the textbook Cutting Edge (intermediate level, Student’s book) (Cunningham, Moor, 2002, p.103).

In the pre-reading phase we can do several activities, e.g.:

- Read the title and think about the word whodunit. Can you guess how the word was formed and what is its meaning? *(verbal-linguistic)*
- Look at the picture and try to guess what happened. *(intrapersonal)*
- Do you have an experience with some crime? *(intrapersonal)*
- Role play *(interpersonal, bodily-kinesthetic, logical-mathematical)*

**Detective:** Yesterday somebody was murdered. You have some witness who indicated who was the murder. You suspect a person but he has an alibi – a friend. Try to prove they both lie.

**Suspect:** You are suspected from killing a person in a street. You did not do it and you need some alibi. You mentioned that you were with a friend of yours in the cinema. However, the truth is that you were not with a friend but you stole a car and had a nice drive.

**Friend:** The friend of yours is suspected of committing a crime. You want to help him/her. And you want to confirm his/her alibi. Try to think about the habits of the friend of yours, so the detective does not learn about your lie.

- Role play II. *(interpersonal, bodily-kinesthetic, musical)*

**Witness:** Yesterday somebody was murdered. You have witnessed it. You are at the police station and asked to describe the murder. Think of a person from your classroom and give the description to the police sketcher.

**Police painter:** You are a police painter. Somebody was murdered and you are asked to draw an identikit portrait of the suspected person. Once you finish, try to guess who is the suspected person (it is one of your classmates).

(In the brackets we introduce the intelligence types for whose the activity would probably be most suitable).

In the post reading phase, again we can suggest different types of activities to check understanding:

- Hypothesize what could have happened. *(logical-mathematical, verbal)*
- Draft the room, place all the objects mentioned and note down all the important facts mentioned. *(spatial)*
- Write the interview with a nosey neighbor living next door about what she has heard and saw (including the police investigations, do not hesitate to make rumors and gossips). *(intrapersonal, verbal)*
• Simulate how this could have happen. (bodily-kinaesthetic)

Although there are already ready-made books for developing (supporting) multiple intelligences (extension activities) using this example we wanted to demonstrate the possibilities that has every creative teacher.

Conclusion

Teacher training institution should reconsider the position and the amount of the Psychology lessons that form the part of the general core of the teachers-to-be curriculum. The knowledge should be then applied and developed in the major subjects’ methodology.

What more, the regular cooperation of the teachers and psychologists should be established. This should lead to the improvement of teaching and also the improvement of students learning.

I believe that most of University teachers would be willing to take part in the regular seminars, workshops or lectures where the latest trends in teaching would be presented. Teachers at the elementary and secondary schools are “forced” to their further professional development and also there are Methodology centers who regularly organize the meetings and schoolings of those teachers. On the other hand, the University teachers have chance to meet each other at conferences and solve and discuss some of their problems but still, many times they do not discuss the methodology issues but their field problems. The truth is that University teachers are still teachers, no matter that part of their duties is the scientific research in the particular fields, primarily they should be teachers. This means they should regularly develop their knowledge, skills and abilities in this field as well.

Literature


INTELIGENCIA A UČENIE SA CUDZIEHO JAZYKA

Resumé

Príspevok naznačuje dôležitosť poznania psychológie, predovšetkým inteligencie žiaka ako jedného z dôležitých faktorov, ktoré ovplyvňujú spôsob jeho myšlenia a učenia. Autorka ponúka prehľad definícií inteligencie, ktoré vychádzajú z rôznych autorov, ktorí sa inteligenciou zaoberajú. Príspevok ponúka ukážku, ako je možné pracovať s textom a prispôsobiť ho študentom, ktorí môžu byť charakterizovaní ako študenti s rôznymi typmi inteligencii, či talentmi. V závere autorka navrhuje, že je potrebné zväžiť postavenie predmetu Psychológie a jej časovú dotáciu v študijných programoch učiteľských odborov a následne ju aplikovať v odborových metodikách. Rovnako upozorňuje, že je potrebné prehliadať spoluprácu detských psychológov a pedagógov, čo by sa mohlo odrazil v efektívnosti učebného procesu ako aj postoju učiteľa k žiakovi a vice versa.

The article was written in the frame of VEGA project 1/4509/07: Kvalitatívna transformácia obsahu vyučovania anglického jazyka v mladšom školskom veku.