

# INFLUENCE OF THE GENDER FACTOR ON A STUDENT'S LEARNING STYLE AND ACHIEVEMENTS IN LANGUAGE LEARNING

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The paper includes the investigations of the different aspects of the theory of learning styles connected with the Gender factor. A number of definitions of learning styles, gender differences in patterns of knowledge in various aspects of language learning and its influence on students' learning styles and their achievements are analysed in this paper.

The distinction between the words *sex* and *gender* is a frequent topic for debates within research and epistemology. A common use of the term *sex* is to restrict it to referring to biological distinctions between males and females, while reserving the term *gender* to refer to the psychological features or attributes associated with these categories (Deaux, 1995).

The use of *gender* is more accurate for the connection with the *gender system* identified by researchers, since it marks the cultural and structural dimension. The most studies are concerned with students' gender differences in the process of their learning in the institutes of higher education.

This problem is of obvious scientific and pedagogical interest because modern education should provide equal opportunities for males and females.

**Keywords:** gender, learning style, hemisphere, human brain, language, achievements, differences, influence, cognitive skills

## Introduction

Investigations of gender differences in proficiencies and skills have a long history, but there is still need for further analyses. There is always a need for information regarding reasons why differences emerge, how they are developed, how they influence on individual learning style, human cognitive abilities and achievements.

Educational interest in language is also not new. Studies of rhetoric and grammar go back as far as the Greeks. Many questions are connected with the theme of the present research, for example, both about the nature of language as an aspect of human experience, and about language as a resource of fundamental importance in the building of human experience.

**The AIM** of the research is to investigate the influence of the Gender factor on  
a student's learning style and achievements in the process of language learning.

**The OBJECT** of the research is a student's language learning.

**The SUBJECT** of the research is a gender-based student's learning style.

**The METHOD** of the research is the analysis of pedagogical, psychological, sociological literature.

The tendency to dissociate language and experience was mostly introduced in the western intellectual tradition in such a way where language was seen as rather neutral, merely serving the fruit of experience (Barnes, 1996; Bernstein, 1993; Christie, 2005).

According to the views of scientists (Mathiot, 1999; Oakley, 1992; Plum, 1994), language itself is not only a part of experience, but is intimately involved in the manner in which one constructs and organizes experience. As such, it is never neutral, but deeply implicated in building meaning.

The point at issue is the essence of language. Such researchers as Plum (1994),

Archer & Lloyd (2002) believe that language is a political institution, and those who are wise in its ways, capable of using it to shape and serve important personal and social goals, will be the ones who are able not merely to participate effectively *in* the world, but able also *to act upon it*, in the sense that they can strive for significant social change.

One of the most interesting questions is how these two notions-languages and gender – are bound with each other. The distinction between *sex* and *gender* is a frequent topic for debates within research and epistemology. A common use of the term *sex* is to restrict it to referring to biological distinctions between *males* and *females*, while reserving the term *gender* to refer to the psychological features or attributes associated with such categories as *feminine* or *masculine* (Deaux, 2005; Oakley, 1992).

The use of the term *gender* is also more accurate for the connection to the *gender system* identified by feminist researchers (Hirdman, 1998; Harding, 2006; Scott, 1999), since it marks the cultural and structural dimension.

The inviolability of human life, individual freedom and integrity, the equal value of all humans, equality between women and men are those values the higher school should form and bring about (Lpo, 2004).

A gender aspect of cognitive performance is one important part of this goal. There is always a need for investigations regarding reasons why differences emerge and are developed, what the consequences may be in the process of learning. The research on human cognitive abilities or intelligence many years ago showed the assumption of female intellectual inferiority (e.g. Shields, 1995; Rossiter, 1992; Dijkstra, 2006). But some investigations produced scientific evidence which showed females and males to be equally intellectually capable (Elliot, 1991; Gadwa & Griggs, 1995).

We have to be aware that if gender is a social phenomenon one should be able to find linguistic evidence of it, since language is the primary means by which we create the categories which help our students to learn.

Such an evidence is indeed to be found: from the different treatment by parents of babies, depending on sex; through the messages that women and women's activities are marginal, through the social approval of writing of little girls about home and family, elves and fairies, while their male classmates get on with the business of finding out how the world outside school is, how people in family work, what the power of the world is. (Hallberg, 1992)

According to Florin & Johanson (2003), knowledge is power, and equal levels of competence should remove any legitimate argument for female subordination. The maintenance of female subordination may be understood by two principles:

- the rule of the distinctive separation of two sexes, and
- the rule of the *male norm*.

The later principle is also referred to as the *hegemonic masculinity* principle (Connell, 1997), which states that a higher value is automatically assigned to things masculine (Hirdman, 1998).

Patterns of gender differences are deeply rooted in public media as well as in national belief systems. Many of the beliefs reflected address notions of gender differences in cognitive abilities, proficiencies and achievements.

Francis Galton was the first who claimed the empirical scientific ground for the conclusion that women tend to be inferior to men in all their capacities (Galton, 1907, referred in Shields, 1995). One of many examples from Shields illustrates the logic of that time: "That men should have greater cerebral variability and therefore more originality, while women have greater stability and therefore more common sense, are facts both consistent with the general theory of sex and verifiable in common experience (Shields, 1995).

Females who were seen as the opposite to males by default, were seen more restricted or even invariable intellectually: "A woman is a rule, typical, a man is an individual. The former has the latter exceptional features... there is incomparably less variation among women than men. If you know one, you know them all, with but few exceptions" (Dijkstra, 2006).

There are two major reasons for the author's interest of patterns of language and gender – firstly, educational and social reasons mentioned above, secondly, the lack of research connected with this educational field.

It was early acknowledged that this field had numerous misinterpretations and prejudices against women (Shields, 1995; Rossiter, 2002). Gender differences are often given biological explanations which sometimes refer to previously abandoned theories- as, for example, "a man is the hunter, and a woman is the gatherer".

It seems particularly important to contrast such ideas with well-founded results of what the socially constructed reality is. This problem always to be present when gender differences, their influence on individual learning style and achievements are in focus.

## The Essence of Learning Style

Let's return to the title of the paper and analyse how gender differences influence on students' learning styles and achievements in language learning. The following examples provide a useful overview of a range of definitions of individual learning style.

The learning style is as follows:

- the unique complex of conditions under which an individual concentrates on, obtains, processes, retains and applies new and difficult information (Milgram, 2000);
- the composite of characteristic cognitive, affective, and psychological traits that serve as relatively stable indicators of how an individual perceives, interacts with, and responds to the learning environment (Keefe, 1979);

- the preferences in use of abilities (Sternberg, 1999);
- the predisposition of an individual to learn in a particular way (Parrot, 1998);
- a student's individual reaction to 23 elements of instructional environments is the following:
  - 1) immediate environment (noise, temperature, light, design);
  - 2) emotionality (general motivation, being motivated by a teacher, parents, a peer, persistence, responsibility, the attitude to the structure of a learning task);
  - 3) social preferences (learning alone, with peers, in a group, learning in combined ways);
  - 4) physical characteristics ( auditory, visual, tactile/kinaesthetic preferences, time of day, intake, mobility);
  - 5) psychological inclinations (global/analytic, hemispheric preferences, impulsive/reflective (Dunn & Price, 1998).
- an identifiable individual approach to a learning situation, a learning task (Spolsky, 1990);
- the way that an individual uses to focus his knowledge and skills on problem situations that have not been encountered (Gagne, 1997);
- the generalized difference in learning orientations based on the degree to which people emphasize four stages of the learning process:
  - 1) concrete experience;
  - 2) reflective observation;
  - 3) abstract conceptualisation;
  - 4) active experimentation, as measured by a self-report test called Learning Style Inventory (Kolb, 1985).
- a characteristic manner in which an individual chooses an approach to a learning task (Skehan, 1998);
- a typical mode or manner of an individual of acquiring , retaining and applying knowledge, skills, the way of perceiving, organizing and retaining experiences, responding to particular methods of instructions (Kolesnik, 1996);
- general cognitive and learning characteristics of self-consistent mode of functioning which an individual shows in his perceptual and intellectual activities ( Stern, 1996);
- an instrument of an individual's reflection of reality founded in ontogenesis on the basis of his/her peculiarities of sensory, cognitive and psychic organization, and interaction with social environment in activities (Karpova, 1995);
- the whole, unique, genetically predetermined complex of characteristic conditions under which an individual functions in his/her conscious intellectual activities-concentrates, perceives, processes, retains, and applies new and difficult information- in the unity of progress in learning and acquisition of learning objectives of curriculum with the help of successful interaction with the learning environment and creative use of one's own potential -capacities (Tatarinceva, 2005).

Any student has a characteristic learning style regardless of intelligence or socio-economic status. Psychologists have identified which elements of individual learning style are biologically imposed, stable, and which can be developed during individual life experiences.

The following elements of individual learning style are genetically predetermined:

- the type of information processing (the dominance of the left/right hemisphere of human brain);
- perceptual strengths (the level of the development of auditory, visual, tactile, kinaesthetic sensory canals) (Milgram, 2000; Dunn, 1998; Griggs,1991).

Learning style is a reasonably stable characteristic, only some elements of it such as motivation, responsibility for learning and social preferences can be changed as a result of maturation and strong personal efforts.

At least three-fifths of learning style is genetic, and the biological component of individual learning style works for an individual's whole life-time (Karpova, 1994; Milgram, 2000; Griggs, 1991). Individuals' responses to sound, light, seating arrangements, intake, the optimal time of day for learning, closely connected with the process of information processing, are also biologically predetermined (Anastasi, 1988; Dunn, 1998; Restak, 1999; Thies, 1999).

Such factors as age, achievement level, gender, and culture can influence on individual learning style and his/her achievements of learning (Ebel, 1999; Milgram & Price, 2003; Cavanaugh, 2002; Grebb, 1999).

Let's analyse the influence of the gender factor on a student's learning style and his/her achievements in learning more in detail.

## The Influence of the Gender Factor on a Student's Learning Style and Achievements in the Process of Foreign Language Learning

Males and females learn differently from each other (Grebb, 1999; Ebel, 1999; Cavanaugh, 2002). Males tend to be more kinaesthetic, tactual, and visual, and they need more mobility in a more informal environment than females. Males are more nonconforming and peer motivated than female. Males tend to learn less by listening. Females, more than males, tend to be auditory, authority-oriented, need significantly more quiet while learning, they are more self- and Authorities – motivated, and are more conforming than males (Marcus, 1999; Pizzo, 2000).

There are fundamental differences among males' and females' ways of communicating, the so-called, *genderlects*, as a takeoff on language dialects (Thomson, 1995). She believes that a male's learning focuses on competition, status and independence. On the contrary, a female's world focuses on intimacy, consensus, sometimes and independence as well.

Social preferences of males and females are also different during the process of learning.

Male students prefer learning tasks connected with competitions in hierarchical groups, while female students learn by collaboration in small groups in which mutual liking is important (Dorval, 2000).

Studies conducted by Aries (1996), Leet-Pellegrini (2000) and Fox (1999) suggest that males feel more comfortable in a lecturing role, which is a demonstration of expertise and status, but females feel more comfortable in a listening role, which show a desire to collaborate, bond and to be liked by products of a world of connections, not status. Females prefer to share their expertise with others, rather than rivalling with them.

One of the most important parts of language learning is the ability of decision making, and we can see again contrasting worlds. Ong (1999) suggests that males' world is based on *adversativeness*,

On the contrary, females prefer to keep peace.

Female students see the orders that males give them as unnecessarily provocative, challenging and aggressive, while male students see the suggestions that females make as infuriating and bossy (Cavanaugh, 2002).

Doing the language learning tasks connected with problem-solving, male students and female ones show clear differences in their approaches to learning tasks (Dorval, 2000).

As far as a conversation was concerned, students-males produced mass of short spurts of speech. There was much teasing, which Leaper (1988) termed *negative reciprocity*, and much defiance, meanwhile students-females produced big blocks of talk, they were obedient, there was much attentive listening and sympathizing.

Tannen(1992) suggests that male students prefer to get learning tasks which give them the possibility to talk more in public settings( *report-talks*) because they feel compelled to establish or maintain their position in the group. Female students, on the other hand, prefer to talk more in private settings (*rapport-talk*), because they see conversation as an important way of maintaining relationships.

When specific language tasks are considered, females do better on some of them and males do better on others. For example, females exceed on tasks requiring perceptual speed but males do better on the general information tasks.(Feingold, 1999; Lynn & Irwing, 2002).

Females are better than males on language learning tasks connecting with remembering verbal information, faces, names, object locations, and landmarks along a route, they have better episodic memory than males, but males do better with the travel directions tasks (Colley, 2001; Ong, 1999; Larrabee & Crook, 1993).

Kraft & Nichel (1995) in their investigation proved females' advantages on measures of verbal fluency, vocabulary and quality of speech, but students-males were better on writing.

Males more often than females have difficulties on language learning tasks connecting with the perception of speech. According to Shapiro, Church, & Lewis (2002), Maccoby and Jacklin (2004), males more often than females experience reading disability, troubles with language and speech.

On the other hand, males do better on tasks connected with logic, solving problem situations (McMahan, 2002, Petrovskiy, 1999).

The style of dealing with difficult language learning problems continues during the language course. Male students downplay or dismiss the problems of other people or they change the subject. They do this in order to minimize the problem. In contrast, female students listen to, confront problems, and reinforce other people. These two approaches to language learning problems are poles apart (Bress, 2000).

Particular interest in the area of language learning has been paid to students' approaches based on gender differences to a reading task, since reading plays a significant role in achieving high results in foreign language learning, and in promoting an individual's ability to function in our modern society closely connected with successful applying the English language in many spheres of life.

There are three text types in reading proficiency in the process of foreign language learning:

- *Expository* prose, refers to text materials designed to describe or explain something;
- *Narrative* prose, refers to text materials where a writer's aim is to tell a story, a fact, or a fiction;
- the so-called *Documents*, requires the students to process information organized in matrix formats, such as maps, tables, charts, graphs, diagrams, sets of instructions.

According to Rosen (2005), a consistent female students' advantages were found in Expository and Narrative item types whereas gender differences in performance in Document tasks tended to be either smaller or shift direction.

The author shares the point of view of Elley (2004), Gustafsson & Undheim (1996), who believe that the students' approach to Document reading is based on a psychometric theory of cognitive abilities according to which, differences in performance in any cognitive task are caused by differences in several underlying abilities and contextual dimensions, which in turn have various degrees of generality.

This theory is supported by a vast amount of empirical evidence. One reason why females studying English do not have so much advantage on Documents as they have on Narrative and Expository may well be due to the fact that Document tasks besides written words often involve numerical and spatial content, that is why males excel at these reading tasks (Carrol, 2003).

Another explanation is that the performance is affected by the actual topic in each Document task (Halpern, 2002). Reading belongs to the verbal domain, though in language learning practice reading is a key skill in almost any cognitive task. A student's reading proficiency has not been interpreted as a single ability, but rather as a reflection of several certain cognitive abilities depending on the nature of the reading material used for the language study and individual differences in cognitive abilities and perception, that is learning style.

The visual search in Documents demands more students' attention, perceptual skills, further more, Documents require a reader to follow directions, some language reading tasks require a student to connect different pieces of information to each other in order to integrate and compare.

Documents often involve the requirement of processing numbers. Numbers have a strong negative emotional loading for some students. This factor is connected more with females than with males, and it may affect their performance (Thompson, 2005). Gates (2001) found female students' advantages in three measures of reading:

- speed,
- reading vocabulary,
- a level of comprehension.

Taube & Munk (1996) reported different students' achievements based on the Gender Factor as a function of the themes for text tasks. A rather consistent pattern was found with female students achieving better on narrative texts, where the themes were connected with human beings, romantic love, strong feelings and human activities. This study supported the hypothesis that the topic addressed in the reading task is important for a student's achievement as well as for understanding gender differences in students' learning styles.

## Possible Biological Explanations of Gender Differences in Students' Learning Styles

As it was mentioned at the beginning of the paper, at least three-fifths of learning style is genetically stable, the processes of information processing and perception are biologically predetermined. However, there is really no evidence to suggest that gender differences in cognitive abilities are inherited. Human behaviour is most influenced by hormones which are related with gender activities.

And the hormone that seems to have the greatest impact is testosterone.

Prenatal hormones contribute much to the development of human brain and sensitise certain parts of brain, namely, the hypothalamus, which helps to regulate the activity level. Male and female get different amounts of prenatal hormones, which may lead to differences in males' and females' brains. Prenatal hormones significantly shape cognitive abilities (Luria, 1975; Sperry, 1989).

Some researchers have looked for gender differences in overall size of the brain (Springer & Deutsch, 1997; Rogers, 2000; Fausto-Sterling, 2000), others have concentrated on the specific parts of the brain.

One area that has been the focus of much study is the area of the brain, called the corpus callosum. Some research shows that a portion of this bundle of nerve fibres towards the back of the brain (the splenium) is larger and more rounded in females than males. The function of this part of the corpus callosum links together parts of the left and right hemispheres that control speech and spatial perception. The larger splenium may account for females' advantage on some measures of speech production and comprehension. The organization of males' brains may give the advantages on visual-spatial tasks (Allen & Gorski, 1990; Halpern, 1992; Wood, 2003).

Some investigations suggest that both hemispheres of a female's brain may be active during certain tasks, while only one hemisphere of a male's brain is active during the same tasks (Rogers, 2001; Rider, 2005). Part of the band of fibres connecting the two hemispheres is thicker in a female's brain that allows the greater interaction of the hemispheres. It could explain why males excel on visual-spatial tasks and females on verbal tasks (Rider, 2005; Fausto-Sterling, 2000).

According to Halpern (2000), Geschwind & Galaburda (1999) the right hemisphere of the brain normally is developed faster than the left hemisphere, that is why the left hemisphere is more vulnerable to the relatively high level of prenatal testosterone that male foetuses are exposed to.

As a result, the right hemisphere of a male's brain is thought to be stronger; i.e., it assumes more control than the left hemisphere. Females, on the other hand, have more balanced left and right hemispheres in terms of control.

That is why males do worse than females on tasks associated with more left hemisphere activities and better on tasks associated with more right hemisphere activities. Many verbal tasks are associated with greater left hemisphere activities, whereas solving spatial tasks and some logical tasks are associated with greater right hemisphere activities, as a result, males do perform better on spatial and logical tasks, but females with tasks that are mostly connected with the humanities and music.

Summing up, the research suggests that hormones, especially, testosterones have impact on cognitive abilities, but much more research needs to be done before we can make any clear conclusions about hormones, gender differences in performance and cognitive abilities in general.

## Conclusion

Each student of a higher institute of education can learn effectively, if her/his learning needs and goals are appropriately diagnosed and prescribed.

A student's development in the cognitive and affective domains occurs if a language learning task, instructions, methods, variative learning programs and a mode of presentation of new and difficult information corresponds to a gender-based student's learning style and his/her cognitive level, and a student has a possibility to choose completely own way of implementing the learning task.

According to the Dual Coding Theory (Pavio, 1986), if new information introduced through the primary sensory canal, further on is deliberately reinforced through the secondary sensory canal, it will be acquired significantly better.

Thus, we can significantly improve a student's achievements in language learning taking into account her/his gender, approaches to learning, preferences to the certain type of tasks, peculiarities and the development of sensory canals, the type of information processing, and developing the emotional and social factors of a student's learning style.

The more we know our students, their needs, goals, learning styles, considering their gender differences, the more we can help them to improve learning achievements.

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## Tatarinceva A. DZIMUMA FAKTORA IETEKME UZ STUDENTA SASNIEGUMUS SVEŠVALODAS IEGUVĒ

Pētījumā analizēta dzimuma faktora ietekme uz mācības stilu un augstskolas studentu sasniegumiem svešvalodu apguves procesā. Tieks analizēta jēdzienu „apmācības stils”, „valoda”, „dzimums” būtība, izpētīta studentu apmācības izvēle svešvalodu apguves procesā atkarībā no dzimuma, analizēti zinātnieku pētījumi galvas smadzeņu struktūras jomā, kuri kontrolē informācijas uztveres un apstrādes procesus, sniegtas rekomendācijas, kā palīdzēt studentam paaugstināt viņu sasniegumus svešvalodu apguves procesā  
**Atslēgas vārdi:** Dzimuma faktors, kreisā/labā puslode, galvas smadzenes, izvēle, svešvaloda, sasniegumi, panākumi

## Tatarinceva, A. INFLUENCE OF THE GENDER FACTOR ON A STUDENT'S LEARNING STYLE AND ACHIEVEMENTS IN LANGUAGE LEARNING

The paper includes the investigations of the different aspects of the theory of learning styles connected with the Gender factor. A number of definitions of learning styles, gender differences in patterns of knowledge in various aspects of language learning and its influence on students' learning styles and their achievements are analysed in this paper.

The distinction between the words *sex* and *gender* is a frequent topic for debates within research and epistemology. A common use of the term *sex* is to restrict it to referring to biological distinctions between males and females, while reserving the term *gender* to refer to the psychological features or attributes associated with these categories (Deaux, 1995).

The use of *gender* is more accurate for the connection with the *gender* system identified by researchers, since it marks the cultural and structural dimension. The most studies are concerned with students' gender differences in the process of their learning in the institutes of higher education.

This problem is of obvious scientific and pedagogical interest because modern education should provide equal opportunities for males and females.

**Keywords:** gender, learning style, hemisphere, human brain, language, achievements, differences, influence, cognitive skills