

## MOTIVATION AND PERSONALITY MODEL AS A REPRESENTATIVE FACTOR OF STUDENTS' STUDYING HABITS

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**Abstract:** *In this paper we present the results of one part of a research which was to determine studying habits of students in the studying process. The findings obtained in research were to be used for enhancing the effects of studying, especially the ones realized through educational platforms. The research tested correlation between personality traits and motivation in a learning process. In this research, 'Big Five' was used as a personality model. The results showed that there is correlation between personality traits and motivation, but not all personality traits affect motivation in the same way and with the same strength. The research was conducted at the ICT College of Vocational Studies in Belgrade on 92 students, and gave some conclusions that were useful in further research of students' studying habits.*

**Keywords:** *Big Five, personality traits, adaptive learning, motivation*

### 1. INTRODUCTION

Educational process and personal development are nowadays considered to be one of the basic elements of our society and the foundation for society improvement and development. Having this in mind, study approaches are being developed which will improve the quality of studying and which will define standards for more efficient and effective learning process. In order to explore better parameters which influence the learning process there was a survey conducted at the ICT College of Vocational Studies in Belgrade. The aim of the research was to ascertain the studying habits of students

The research presented in this paper is only the introductory part of a bigger research project where we want to ascertain the studying habits of students in the studying process and to use them for enhancing the effects of studying, especially the ones realized through educational platforms. The problem was presented and analyzed in the next chapter and it was the starting point of the research. In the third chapter the research was described in its last phase at the end of 2014. In the fourth Chapter the research results and their analyses are given, while the research conclusion was shown in the last chapter.

### 2. DESCRIBING LEARNER

The way how new technologies are going to be applied and developed in the studying process depends on findings and scientific facts from the wide range of science fields such as psychology, pedagogy, Human Computer Interaction, medicine. The aim is to use technology in favor of a user and by use of this new technological elements to enhance the studying process

onto a new level. Studying should be effective, efficient, adapted to users' needs, and the quality of knowledge obtained good. In addition, a student has to be motivated for studying, and the system should be designed to recognize the best possible way qualities of an individual, which are important for the studying process [2] as well to give him the subjective feeling of satisfaction while using the system. [4].

Motivation is the factor which stimulates the activities of an individual: influences certain behavior, and keeps it going and directing towards a certain goal. Motivation plays a very important role in education and influences students in many different ways. It can influence the growth of invested work and energy of a student while studying materials, it can provoke some creative thinking in the fields of study, and at the same time it can initiate certain activities concerning the materials and that way enhance the cognitive studying processes and the whole study performances [5].

We can observe the motivation within two aspects. We can speak about intrinsic and extrinsic motivation.

The intrinsic motivation is the one that comes from the person itself and it causes the action. It results from the urge of a person to feel the personal satisfaction and fulfillment due to performed activity (for example acquired materials or performed tasks). The intrinsic motivation is very often described as something an individual does without direct inducement. In education students with high intrinsic motivation achieve top results in learning. Good intrinsic motivation leads to high quality knowledge [6]. Students go deeper into study materials and have a more creative approach. There is a strong wish to overcome problems by studying and connecting acquirement with other accomplishments.

Factors which have a positive impact on increasing the intrinsic motivation are challenges in studying, curiosity, need to understand environment, developed imagination, competitive and team spirit, need to get approval and acknowledgement. People with strong intrinsic motivation need intellectual stimulation and are enthusiastic about studying [3]. The feeling of inner satisfaction motivates them to study and work.

Extrinsic motivation is a kind of motivation which causes activity due to extrinsic influences on a person. Taken actions aim to achieve results which will be regarded as an award (during the study process it is an adequate grade) or help to escape punishment [9]. This type of students motivation makes them study to get an adequate reward (good grade or to pass an exam) and not because they want to obtain new accomplishments. People, who belong to this group of extrinsic motivated students, study to achieve certain goals and given goals are their main resource of motivation. This way obtained knowledge is not combined with other accomplishments, and as soon as the motive was established (an exam passed or good grade obtained) there is no further motivation to remember the study materials and/or extend them. People without motivation do not respond to extrinsic medium influences [7].

In the process of e-learning intrinsic motivation plays an important role. Environment in which a student follows e-courses differs fundamentally from face-to-face environment. In face-to-face environment a teacher is in a direct contact with students and influences the speed and way he/she manages the class. Depending on the current students motivation the teacher can adapt a lecture dynamic or a lesson or can choose some other ways to motivate students in order to obtain better results in their work. The motivation given by the teacher is a factor of an extrinsic motivation. It has its positive effects when students' concentration and working energy diminishes. In e-learning the student has to improve his own motivation when his motivation for work and learning lowers. Interface used in e-learning should increase the user's motivation [30].

To get the information about the motivation of the e-learning user it is necessary to analyze the user's behavior during the process of adopting study materials which are initially not understandable and are described as difficult to understand. Apart from that, the chosen criteria by the user saying which study materials are going to be studied can show the state of intrinsic motivation.

The research has been pointed towards establishing connection between studying motivation and personality model. The personality model which has been dominant in the sphere of personality psychology in the few last years and which is used to describe personality is so-called Five Factor Model – FFM or the model 'Big Five', which describes individual traits by an acronym OCEAN. According to that model personality can be described by five traits: Openness –O, Conscientiousness – C, Extraversion - E, Agreeableness – A and Neuroticism – N. The authors of this model assume that the most

important dimensions of personality are universal and unchangeable and that they are shown consequently in different samples, analyses` procedures, cultures. This five main traits are called domains and present a group of different cognitive, affective and behavioral dimensions which can be grouped differently. Facets represent the hierarchically lower traits which define the domain. The advantages of this model are its empirical foundation and conceptual apprehensiveness [11].

The number of researches using the model Big Five to establish connection between the personality type and style of learning is growing every day. The research of Li Fang Zahn [15] gave two hypotheses which have given us the answer based on certain personality traits: what approach have students got towards studying: frivolous or thorough and efficient. According the first hypothesis, students with a higher neuroticism factor (N) perform tasks with more difficulty when they just have to repeat the study materials and when they do not want to go deeper into the core of the learned materials. The second hypothesis stands for attitude that people more apt to openness [O], extraversion (E) and conscientiousness (C) have thorough approach towards materials that have to be learnt and go deeper into the matter. Data analysis has confirmed that Big Five can, to certain extent, anticipate which study approach a person will have. Conscientiousness (C) and openness [O] are two personality traits which have given the best predictions about the study approach, whereas agreeableness (A) anticipates which study approach is not achievement-oriented, and extraversion (E) does not give any distinct correlation[15].

In one older research [12] they were looking for connection between personality traits following the Five Big criteria and learning style. In this research they have presented the four studying styles: meaning directed, reproduction directed, application directed and undirected style. According to Vermunt [18], undirected learning style characterizes student's inability to differ important theses from less important ones. Student reads materials even a couple of times and at the same time he feels the load from the quantity of materials he has to study and feels insecure in obtaining his academic achievements. Studying which is directed by reproduction is based on memorizing data and analyzing them to achieve appropriate academic demands, allowing the instructor or teacher to lead them through learning materials and they are mostly motivated by extrinsic factors such as passing an exam, getting a certificate or grade. Application directed studying is a characteristic of those students whose motivation factors are coming from inside as well from outside, but they also possess intrinsic motivation for studying. Intrinsic motivation comes out of cognition that obtained knowledge can be practically used. Application directed studying is typical for those who are systematic in their studying process and have a plan and strategy how to obtain certain knowledge and they show personal interest for studying [16]. We can draw a parallel between the Big Five and Vermunt's categorization of learning styles. It is deduced that there is a correlation among extrinsic and directed studying, studying by

reproduction and application directed studying. Openness is in correlation with directed oriented and application oriented studying. Neuroticism is correlated with free learning style and has negative effect on oral style and reproduction oriented studying. Agreeableness [A] is in correlation with reproduction and application oriented studying. This research has shown that extraversion is in a positive correlation with directed learning, reproduction and application oriented learning. Conscientiousness C has influenced positively direct, reproduction and application oriented learning, and negatively free learning. Openness was in a positive correlation with directed and application oriented learning and in negative correlation with free learning. Neuroticism is in positive correlation with free learning and in negative with directed and reproduction oriented learning. Agreeableness [A] has got a positive influence on reproduction and application oriented learning [12].

### 3. RESEARCH DESCRIPTION

During the November 2014 the research was conducted with a goal to find out some of the students' learning habits at the ICT College of Vocational Studies in Belgrade. This study is a part of a bigger research project where some additional researches with the same goal have been planned. Findings collected within the project should give us some information about students' habits during the studying process. The research topic was examining the students' personality model according the Big Five role-model and discovering the connection among certain aspects of personality domains with students' studying habits during the studying process.

The research was done on the specimen of 93 examined students, who are the second year students at the ICT College of Vocational Studies in Belgrade studying one of three independent Study Programmes (Telecommunications, Postal Banking technologies and Internet technologies). The most participants (89%) are aged 18 to 23. The research data have been collected by the questionnaire where the students were answering the whole set of questions. The questionnaire had 40 questions. 24 questions were dealing with personality traits following the role-model the Big Five and students could answer using the five grade scale from 1 to 5, where 1 stood for 'I absolutely disagree', 2 for 'I do not agree', 3 for 'not oriented', 4 for 'yes, I agree' and 5 for 'I absolutely agree'. The remaining questions were there to determine age structure of examined students, their study programme, the degree of computer literacy, the time quantity each examined student spends using computer and to what purposes. The students were filling in the questionnaire form on the social network Facebook using the application 'My surveys'. In order to analyse the students' motivation a question was asked: *what criteria do you use to choose what is to be learnt?* As an answer to that question there were 5 options: 'I study only those materials which are necessary to pass my exam; I study only those materials I find interesting; I study materials which will develop my intellectual and creative abilities; I study materials which have practical use. Students were offered to answer this question with more than one

answer. Besides the given question, which was supposed to give insight into motivating factors of students, we were looking for one more answer.

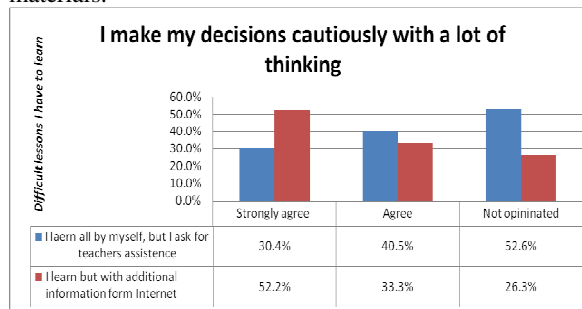
The stress was also put on the second question in this questionnaire *'The lessons I have to study but they are difficult to understand'*. The answers were: *'I skip them and I do not study them; They are real challenge for me; I am trying to learn them but I ask for extra help of my teacher or colleagues; I am trying to learn them with a help of additional information on the Internet.* Students could answer this question using more than one answer.

Obtained results of this research were statistically elaborated with a goal to establish the degree of internal consistency and data reliability within the research. For that purpose we have used Cronbach's alpha coefficient. Obtained results of alpha coefficient which were above 0.6 explain the research results as a system with acceptable internal consistency, while the results above 0.7 show a system with a good internal consistency [29].

### 4. RESEARCH RESULTS

The research results have been grouped according to the domains and facets which have given the most distinguished correlations between motivation and personal traits.

Facet of personality from the domain of openness which is shown through the attitude *'I make my decisions cautiously with a lot of thinking'* has given us two conclusions. The first applies to the facet of how students solve the problems of lessons which are difficult to understand. According to it, the less that facet is present among students, the more they rely on help of a teacher or colleagues to solve the problem. Opposite to it, the more that facet is shown, students are more independent in finding solutions for learning materials which are more difficult to adopt and they use the Internet more, in order to find extra information to understand better the learning materials.

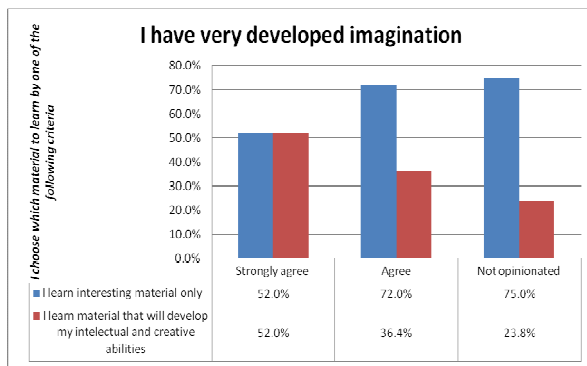


**Image 1:** *'I make my decisions cautiously with a lot of thinking'* facet of personality analysis

Personality facet from the domain of openness which is shown by the attitude *'I have very developed imagination'* has given us the following conclusion. Students with less developed imagination search for extrinsic factors as their study motivation (such as to pass an exam), whereas their intrinsic motivation is less pointed out. Personality facet

from the domain openness which applies to students` creativity shows that although the level of intrinsic motivation is good, it is necessary additionally to motivate creative students to use teaching materials, which are far away from their interest`s sphere.

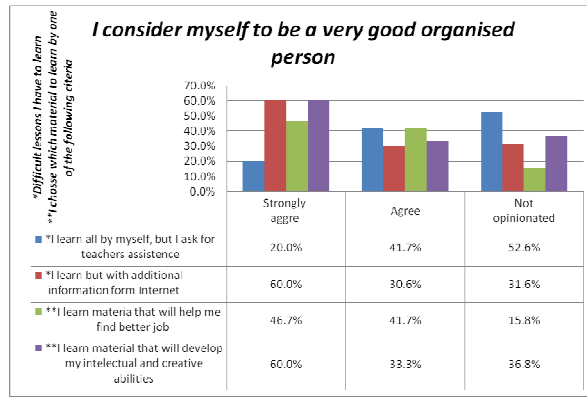
The personality facet from the domain of conscientiousness, which is pointed out through very good personal organization, has given us the following conclusion. Well organized students will use the Internet more often as a source of information necessary for adopting difficult lessons rather than help of a teacher or colleagues. Also, the intrinsic motivation is much more visible with well organized students than with less organized students. In the domain of conscientiousness there is a personality facet concerning the students` diligence. Students who consider themselves hardworking and diligent need less extrinsic motivation.



**Image 2:** 'I have very developed imagination' facet of personality analysis

Personality facet from the extroversion domain where the students had judged themselves as energetic persons have shown that students who feel they are energetic have stronger intrinsic motivation. The questioned students who had described themselves as medium or hardly adventures personality type demand higher level of extra motivation for studying. Analyzing the neuroticism domain the emotional facet stands out. Students who had described themselves as very emotional and medium emotional personalities need less extrinsic factors in order to increase their working motivation compared with students who had described themselves as less emotional. In addition, during the studying process more emotional students were in higher percentage asking help of a teacher to manage the more difficult lessons compared to less emotional students.

Personality facet from the domain of agreeableness expressed by attitude: 'I consider myself to be a very friendly person' has shown that students with a less developed facet have got higher extrinsic motivation compared with those whose facet has been only moderately shown. Students who had judged themselves as friendly persons will ask teachers` help in higher percentage in managing difficult lessons compared with students who had described themselves as moderately friendly.



**Image 3:** 'I consider myself to be a very good organised person' facet of personality analysis

## 5. CONCLUSION

This research was supposed to establish the existing connections among the personal traits following the 'Big Five' model and certain studying habits which would show us the motivation source for studying and the way the students tend to solve more difficult learning materials. The main conclusion is that this connection exists, but that all personality facets do not show at the same extent the connection of mentioned factors.

Personality facet from the domain Openness (which is shown by students` developed imagination) and agreeableness (a student describes him as a friendly person) have given the best results of dependence between the personality traits and degree of intrinsic motivation. Facets can additionally be understood as a confirmation of existing connections among motivation and certain personality traits from the domain of conscientiousness (facet which describes person as hardworking), while the influence shown through extroversion (a personality facet showing how energetic a person is) and neuroticism (emotional facet of a person) is less pointed out. Such results fit within the conclusions obtained by similar researches([15], [12],[7]). The way how students deal with more difficult study units is best shown by the correlations among the personality traits from the domain openness, expressed by the attitude to make decisions after a lot of considerations and from the domain of Conscientiousness which is expressed through a very good personal organization. The emotional aspect from the domain of neuroticism points out tendency towards personal approach and face-to-face communication while solving more challenging tasks. The domains of agreeableness and extroversion have not shown strong enough connections among those facets with a mode how students solve more difficult tasks. Certain types of personality were distinguished in this research and have pointed out possible use of those results in some further researches dealing with development of interface e-learning and different adaptive forms of learning in e-surrounding based on students` personality traits. Openness, conscientiousness and extroversion have

described the quality of the domains better than the neuroticism and agreeableness. In the first three domains the differences in answers were bigger than in the other two domains and they were given here.

Research data were statistically processed and verified by the Cronbach's alpha coefficient. The accepted influence in this research ranged from alpha coefficient 0.63 till 0.75. The specimen of 93 students is modest and is one of the reasons we got the values of the alpha coefficient not over 0.75. We should take those results with a certain reserve until some similar researches are done on a bigger number of participants. Also the whole research was based on results obtained by the questionnaire where students' answers were introspectively judging their personality facets. Such data cannot be proved empirically because they are based on personal attitude of each individual and not on real results that could be used to judge their behavior. Nevertheless, this research has provided valuable results and conclusions as well foundation to continue exploring connection between students' studying habits and motivation source.

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