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STUDENT'S MOTIVATION AND ANALYSIS OF FACTORS INFLUENCING IT

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Abstract. The object of the given research is student's values orientation and factors which affect their motivation to learn. The research was carried out testing the students of Riga Technical University. The needs of students were researched using the Maslow's needs theory. The student's motivation level was defined using the expectancy theory of V.Vroom. Authors of the given research offer their own model for evaluation of student's motivation level. The influence of factors on the level of motivation is defined with the help of the determinate factorial analysis method. The results of the research can be used for creating optimal study conditions depending on student's individual characteristics.

Keywords: student needs, motivation level, knowledge, study process.

1. Introduction

Changes in higher education environment, increasing requirements for studies quality, the student's changeable expectation for learning contents and methods, increasing higher education internationalization and globalization stimulates finding ways how to evaluate and increase the quality of studies. In the current atmosphere of the higher education student have become "customers" and therefore their views must be heard and acted upon [1]. This assertion is actual for Latvia too, when the private higher education spread more and more. Motivation has been a highly important variable, and every learning model incorporates a theory of motivation [2].

The term "Motivation to learn" has a slightly different meaning. A.Brennen says that "Motivation has been defined as the level of efforts an individual is willing to expend toward the achievement of a certain goal" [3].

T.M.McDevil classifies motivation on intrinsic or extrinsic and says, that "Motivation energizes, directs and sustains behaviour" [4].

It is defined by M.Rost as the meaning fullness, value and benefits of academic tasks to the learner-regardless of whether or not they are intrinsically interested [5].

The emotional determination of the motivation gives J.Firestone, who called motivation "neglected" heart of teaching and says that all teachers' activities are filtered through our student's motivation. Without student motivation there is no pulse, there is no life in the class [6].

From academic perspective recent motivational models consider motivation as a hypothetical construct that explains the start, direction and perseverance of behaviour aimed at a given academic goal focused on learning, achievement, the ego, social value or work avoidance. Evaluating motivational orientation of students M.S.Garcija determined four components what are involved in this process: the value that students assign to the goals, perception of their competence, causal attributions and emotional reactions [7].

Different models and theories of motivation offer plentiful conceptual basis and empirical evidence which coexist in a field of motivation: B.J.Zimmerman the Self-efficacy theory [8], Expectancy-value theory of achievement motivation [9]. The Intrinsic-extrinsic theory of motivation in the research on relationships between motivation and academic achievement conclude that studies on motivation are focused on different tendencies: goal approach, intrinsic-extrinsic motivation, interest approach and self-outlining variability [10].

The challenge of improving motivation is a high priority all over the world. Many professors note the student motivation has fallen in recent years. This problem is urgent for Latvia too. Latvian University rector professor Martins Auzinsh said, that the main problem for Latvian students is not the quality of pre-university education, but unwillingness to work seriously [11]. However, this research demonstrates that pre-university education level impact on student's motivation level.

Authors of the article concerned on research of student motivation on the base of Maslow theory of the needs and Vroom Expectancy theory.

The research aim is to determinate main student's needs and factors influencing motivation.

The research object is student's values orientations and factors affect the motivation to learn.

Methods: literature review, focus group interview, data descriptive and factorial analysis.

Research was done on the basis of testing in which participated 560 students of Riga Technical University. Questionnaires were conducted during the period of 2009-2012.

2. Determination of students' value orientations on the base of Maslow theory

Abraham Maslow attempted to synthesize a large body of research related to human motivation. Maslow posited a hierarchy of human needs based on two groupings: deficiency needs and growth needs. Within deficiency needs, each lower need must be met before moving to the next higher level. The first four levels are: physiological needs, safety needs, belongingness needs and esteem needs. Maslow's initial conceptualization included only one growth need-self-actualization. Maslow differentiated the growth need of self-actualization, specifically naming two lower-level growth needs prior to general level of self-

actualization (cognitive, aesthetic) and one beyond that level (self-transcendence) [12].

According to Maslow, an individual is ready to act upon the growth need only if the deficiency needs are met. Research of students' requirements on the base of Maslow's theory can bring an insight on which information students are eager to get in dependence of the level of priority needs [13]. Maslow theory assumes that 90% of motivation depends on individual, however according to fifty-fifty rule theory, 50% depends on individual and 50% on surrounding environment [14]. The interrelation of Maslow's theory and getting of desirable information is described by Norwood [15].

Norwood proposes that according to Maslow's theory individuals on different levels of needs seek a different kind of information. Students seek coping information on physiological level of needs, helping information on safety level, enlightening information on belongingness level, empowering information on esteem level and edifying information on self-realization level of needs.

Student's needs were researched using statistical grouping methodology. Statistical average value was used as an instrument to measure level of needs. The most significant needs turned out to be the need to defend, which is explained by the desire of the students to have stable and constant job as a guarantee of being defended. On this basis students strive to get information which, in their opinion, can help to get a good job. Studies conducted show that 90 % of students consider as the priority the specialty subjects and much less attention is devoted to the general education subjects. The second in the meaning is the need of esteem. Students want to gain a certain social status, to be recognized. The aspiration to be recognized is connected with the interest toward the subjects of psychology and management theory (for the definite group of students). Social and material needs are less important, than previous two needs. The least need, as it turns out, is the need of self-realization.

Therefore, it seems appropriate to ask students what they want if time and money were not a person's life object, that is student has to imagine, what he would do if he had all the money and time needed to engage activities and were secure [16]. This approach is likely to identify the most important needs of the individual. This approach is used for testing students.

Testing participants were offered to define the hierarchy of needs for student, who has an "ideal" situation (guaranteed job with high enough income). The comparison of real priorities with ideal is presented in the Figure 1.

As we can see in Figure 1, the need of self-realization is the most urgent in ideal conditions, but social and esteem needs are at the same level as in reality.

Maslow recognized that not all personalities followed his proposed hierarchy. While a variety of personality dimensions might be considered as related to motivational needs, one of the most often cited is that of introversion and extroversion. Using Alderfer's ERG theory [17], Maslow's theory of needs can be modified by dividing the needs to 3 levels: growth, relatedness and existence, each

with an introverted and extroverted component. This organization suggests there may be two aspects of each set of needs. Different personalities might relate more to one dimension than other.

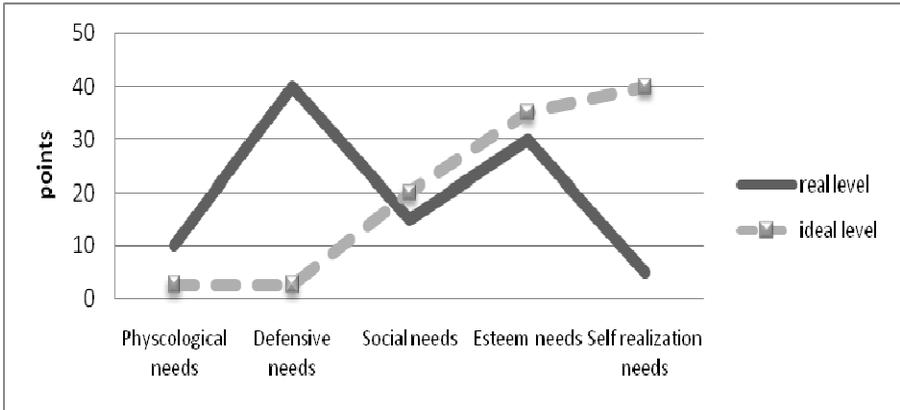


Fig. 1. The student’s real and ideal level of needs

For example an introvert at the level of relatedness might be more concerned with his perceptions of being included in a group, whereas extrovert at the same level would pay more attention to how others value that membership, or introvert at the level of existence will think more about physiological needs, but extravert will pay more attention to connectedness and security. In describing growth level for introvert the most important is self-development, whereas extraverts assist in the development of other’s competencies.

Using Figure 1 dates the results of the modification of Maslow’s needs levels into the transformed Maslow’s and Alderfer’s Hierarchies models are presented in table 1.

Table 1. Modification of needs levels of students

Level		Introversion		Extroversion	
Definition	Points	Definition	Points	Definition	Points
Relatedness	45	Belongingness	15	Esteem	30
Existence	50	Physiological	10	Security	40
Growth	5	Development of competencies		Transcendence, relationship to the unknown, unknowable	

Given the results presented in the table 1, tested students belong to the extroverts group. The growth need which is very insignificant in comparison with the offered model as the extroverts is expressed not in the aspiration to develop competence, but in the desire to help others find self-fulfilment and realize their potential.

3. Analysis of the level of motivation and factors influencing it

Expectancy theory uses one of the cognitive approaches to study motivation and proposes the following equation: expectancy x value (E x V).

E x V theories suggest that a process akin to rational gambling determines choices among courses of action. For each option, two considerations are made: what is the probability that this outcome will be achieved, and how much is the expected outcome valued?

Vroom breaks expectancy down into two components: expectancy and instrumentality. He modified the equation of expectancy theory as follows [18]:

$$\text{Motivation} = \text{Perceived probability of Success (Expectancy)} \times \text{Connection of Success and Reward (Instrumentality)} \times \text{Value of Obtaining Goal (Value)} \quad (1)$$

Since the equation states the three factors of Expectancy, Instrumentality, and Value are too multiplied by each other, a low value in one will result in a low value of motivation.

If an individual doesn't believe that he can reach desired level of achievement, the outcome becomes less important to him, also if individual does not value the outcome his motivation will be lower even if he is confident that outcome can be achieved at the desired level [19].

According to this formula a low value in one factor will result in a low value of motivation. That is, if an individual doesn't believe he can be successful at a task or he does not see the connection between his activity and success or the individual does not value the results of success, then the probability is lowered that individual will engage in the required learning activity. From the perspective of this theory all three variables must be high in order for motivation to be high.

By using the expectancy theory of V.Vroom the analysis of student's needs level is conducted. To evaluate the level of motivation of students the equation of expectancy theory is offered to use, where the main emphasis is made on the desire to get a good job.

Students' expectancy in the offered model is connected with the hope of a good education. Education is composed of three components: general theoretical training, specific knowledge and practical training. The possibility to get a good job is viewed as the reward and as axiological equivalent of such a reward is the importance of a good job for a student.

The motivation level can be described with help of the given equalization:

$$M = (GE + PK + PT) * D * I, \quad (2)$$

where:

- M* - the motivation level, points;
- GE* - the expectancy to get a good general education, points;
- PK* - the expectancy to get a good professional knowledge, points;
- PT* - the expectancy to get a good practical skill, points;
- D* - confidence that a good education guarantees obtaining a good job, points;
- I* - the importance to obtain a good job, points.

According to the equation, the higher his or her expectation is to obtain a good education, obtain a good job and a position of significance, then higher the student motivation should be. The values of the above mentioned characteristics were defined in points, where “0” means zero assurance, “1” is doubts about the perspective results, and “2” is full assurance of a positive result.

With aim of examining the insufficient motivation of students it is useful to determine the influence of certain factors on the whole level of motivation. In accordance with offered model, five factors influence the level of motivation. They are: the assurance of obtaining a good education (general-theoretic, special knowledge, practical training), the hope of getting a good job, and the significance of a good job.

The influence of factors is defined with the help of the determinate factorial analysis method. Method of absolute distinctions is used as an instrument of research. The model for factorial analysis is created by authors and presented as the equalization 2.

$$M = \left(\sum_{i=0}^2 Rge * i + \sum_{i=0}^2 Rpk * i + \sum_{i=0}^2 Rpt * i \right) * \sum_{i=0}^2 Rd * i * \sum_{i=0}^2 Rj * i, \quad (3)$$

where:

- M* - the level of motivation, points;
- Rge* - the amount of students who gave evaluation from “0” to “2” of the possibility of getting good general educational knowledge;
- Rpk* - the amount of students who gave evaluation from “0” to “2” of the possibility of getting good professional knowledge;
- Rpt* - the amount of students who gave evaluation from “0” to “2” of a good practical training;
- Rd* - the amount of students who gave evaluation from “0” to “2” of the possibility of getting a good job;

- R_j - the amount of students who gave evaluation from “0” to “2” of the significance of obtaining a good job;
 i - the level of the evaluation, points.

The level of motivation and the impact of factors are presented in the table 2. The impact of factors is defined as a correlation:

$$F = (\Delta M_f : \Delta M) * 100\%, \quad (4)$$

where:

- F - cutting of the level of motivation, %;
 ΔM_f - difference between the real level of motivation and maximally possible by factor;
 ΔM - difference between the real and maximally possible general level of motivation.

The analysis of motivation level and factors influencing it is implemented in the given research for those groups of students which were selected of the base of two characteristics: study year and secondary school advancement. Advancements in secondary school were defined by average mark.

Table 2 shows data when dividing students in depending of their level before higher school.

Table 2. Factors which cause the cutting of the motivational level, %

Grade point	General educational knowledge	Specific knowledge	Practical training	Job	Importance of a good job	General level of motivation
>8	10	16	34	40	0	82
7-8	18	17	27	38	0	76
<7	26	9	21	42	2	64

Analysis of the correlation between pre-university training and motivation level shows that students with the high grade point average demonstrate higher general level of motivation during university studies.

Most important factor which lowers the level of motivation is small hopes to get a good job for completely all groups of students. It is interesting to note that there are some students in the group with low average mark in secondary school for whom a good job is not important. As a matter of fact they usually are those students, which enrolled the high school because of their parents and practically they are not motivated to learn.

The discrepancy in the level of motivation mostly is evidenced by differences in expectations to get a good education. The main factor which reduces the level of motivation in students with high level of pre-tertiary training is insufficient

certainty to receive good practical skills, but the students with relatively low level in the secondary school are more concerned how to receive good general knowledge. This can be explained by known weak belief in their strength, but the base of this weakness is relatively low knowledge got in the secondary school.

Factors which lower the motivation were researched for students of the different study years. The results of analysis are presented at the figure 2.

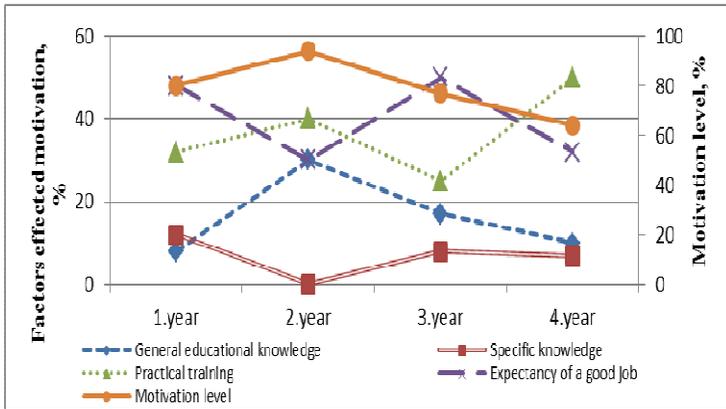


Fig. 2. Motivation level and factors which influence motivation, %

The data at Figure 2 shows that general level of motivation decreases from year to year. The study of student’s needs and factors which influence the level of motivation revealed that the most expressed frustration of the students was the possibility to get a good job. The second important factor which brings down motivation is relatively low expectations to receive a good practical training. They are students who already got practical training before, this means that student’s hopes to get a good practical training are not fulfilled and there is a need for a study process improvement in this sphere. At the same time the expectations of students that theoretical training will be good are relatively high. Student’s hopes to get good special knowledge are higher than for general education knowledge. The fact that exactly last study year students have hopes of a good knowledge in special subjects shows that the professional training in the university is of high level.

4. Conclusions

Results of the research discovered the dominating needs of students; they are the need for safety and the need for recognition. In the framework of needs determination in accordance with the student’s perceptions the diagram of the

needs of “ideal” student is created. This chart shows that in the ideal condition the most actual problem become the need of self-realisation and recognition. Using the combination of models of Maslow and Alderfer students by their nature can be viewed as extraverts and this defines the features of their needs of self – aspiration to transcendence. This has to define to a certain degree the choice of teaching method.

Research of motivation level on the base of expectancy theory of Vroom showed that the highest level of motivation is observed during first years of studying. The main factors which lower the level of motivation are diffidence in the future to get a good job and a good practical training. Special attention is devoted to the research of the impact of the pre-tertiary training on the motivation.

The research revealed that the general level of motivation depends on the level of knowledge, gained in secondary school. Students with the high grade point average demonstrate higher level of motivation at the university. The results of the given research can be used in planning of study processes with the aim to create optimal study conditions which stimulate the involvement of students depending on their individual characteristics.

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