

LEARNING MOTIVATION AMONG STUDENTS IN WOOD ENGINEERING - A CONCERN OF OUR DAYS

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Abstract:

The present paper presents a case study of learning motivation for a group of high school students. The methods for teaching and learning were presented. A group of 10 students were engaged in this study and were monitored in their evolution in learning motivation. Using the appropriate methods to teach and learn led to an improvement of motivation with 10% in the next studying year.

Also, the motivation strategies were presented and promoted for wood engineering students. Learning motivation still remains an open topic and a permanent concern of our days. It is an issue that can be found in the daily agenda of teachers.

Key words: learning motivation; case-study; students; wood engineering.

MOTIVATION - A BASIC ELEMENT OF THE STUDENT BEHAVIOUR

The topic of the present paper started from a stringent problem of education to each level: LEARNING MOTIVATION. This subject is approached from the point of view of scholar performance, in a society where the motivation seems to be a problem and the experience of success and failures come across. The motivation was not easy to be approached, but it was more challenging as a fact is well known: there is no education without motivation. Moreover, when the youngsters personality is developing and their decisions are very different, they are faced with new challenges.

Motivation is a very important concept, a personality vector, which directs the student's guidance to the educational targets. It is a variable which ensured and will sustain the student behaviour and actions too. Human behaviour includes: needs, attractions, emotions, engagements, acts, attitudes.

What is motivation? Motivation is a reason or reasons for acting or behaving in a particular way. <https://en.oxforddictionaries.com/definition/motivation>. Motivation is described as a state that energises, directs and sustains behaviour <https://study.com/academy/lesson/the-importance-of-motivation.html>. It involves goals and requires activity. Goals provide the impulse for the direction of action, while action involves effort: persistence in order to sustain an activity for a long period of time.

The literature of the last decades presented different theories of motivation (Neacşu 1978, Blumenfeld et al. 1991, Felder 2000, Harun et al. 2012, Phang et al. 2012, Sekhar et al. 2013, Gorghiu et al. 2015, Marinescu 2016, Gopalan et al. 2017) but a conceivable structure of the motivation contains:

1. The **first component**: is centred on the knowledge need, understanding, asking the questions and solve the problem. It means a **cognitive impulse**, which is oriented towards the didactic task→ named **intrinsic**.
2. The **second component**: is centred on the **self-fulfilment**.
3. The **third component** is based on **affiliation need**, meaning that a person needs to be accepted by a social group.

A general classification of motivation according to the three criteria is presented in Table 1 (adapted to Neacşu 1978, Marinescu 2016).

Table 1

<i>Motivational factors</i>		
Criterion	Motivation type	Examples/Description
1. According to the acting stimulus	Stimulating	Encouragement, acclamation, opinion respect
	Inhibitive	Fear of mark, contradictory situations, punish, disinterest
2. According to the initiating psychic mechanisms	Cognitive	Curiosity, interest, discovery needs
	Affective	A personal system guide of values, an ability for a certain domain
	Socio-ethical	The attitude to be useful for society
	Pecuniary	Awards, good studying conditions
	Relational	The relationship with other students, school or family
	Professional	Learning for a future profession
3. According to the generating source	Intrinsic	Interest in the course content, the more curious the student is, the more knowledge he obtains. Adopting deep-learning style, putting a lot of effort to understand.
	Extrinsic	Surface-learners, attachment to the outcomes of the task, focusing only on the topics that will be tested on

The self-learning motivation could be positioned in relation with other factors such as family or school, according to Popenici (Fig. 1). The self-statement capacity of the student is the dominant element of the motivation at teenagers or young people.

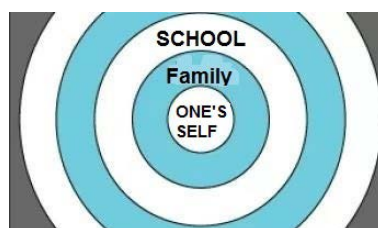


Fig. 1.
Person positioned in relation with family and school.

The family has an important influence on learning motivation by social and economical condition. Parents should have a minimum expertise in communication, negotiation and inter-relation skills. School, through teachers, psychologist, director must act with responsibility when identify the signs of demotivation and the involved causes. Moreover, they should be able to understand which situations may increase or decrease students motivation.

LEARNING MOTIVATION - A CASE - STUDY FOR HIGH SCHOOL STUDENTS

Method for learning motivation assessment

For the present paper a group of 10 students from the IXth grade of the *Constantin Brancuși* High School from Satu-Mare were considered to participate to a mini-inquiry. These youth study in the field of wood technology and they had the task to complete some questionnaires. The aim of this investigation was:

1. To identify the motivational profile of the class.
2. To apply the adequate methods for teaching and learning according to the identified profile.

The questionnaire no 1 (C1) (after Popenici 2009) is intended to explain the perceptions and opinions related to the school performance and the main influencing factors. It contains 24 questions: some of them are opened questions, with a free, non-imposed answer, meaning that there are no right or wrong answer, and other questions with variants of answers, noted with marks from 1 to 5 (1- the worse situation, 5- the best situation). This type of questionnaire must be adapted to the class profile. The total maximum score was 65 points. A score under 32.5 points indicates a student with a possible motivation deficiency.

Another simple questionnaire no 2 (C2) (adapted after the same author Popenici 2009) was used to identify the option of the students for didactic strategies. It contains 12 questions with a, b, c variants of answers. The result of questionnaire indicates: prevalent a - means a predilection for the audible teaching strategies, prevalent b - means a preference for visual teaching strategies, prevalent c - means a preference

for kinesthesia (the body movement is important for students to learn in relation with environment, the practical experiments are preferred).

Results and strategies achieved

The results of the C1 and C2 questionnaires are presented in Fig. 2 and Fig. 3. As seen in Fig. 2, the options were distributed as following: 60% of the students presented a potentially motivation deficit and 40% were more motivated. This result was not so discouraging, but a smaller score of some students will involve a more responsibility in their education and motivation.

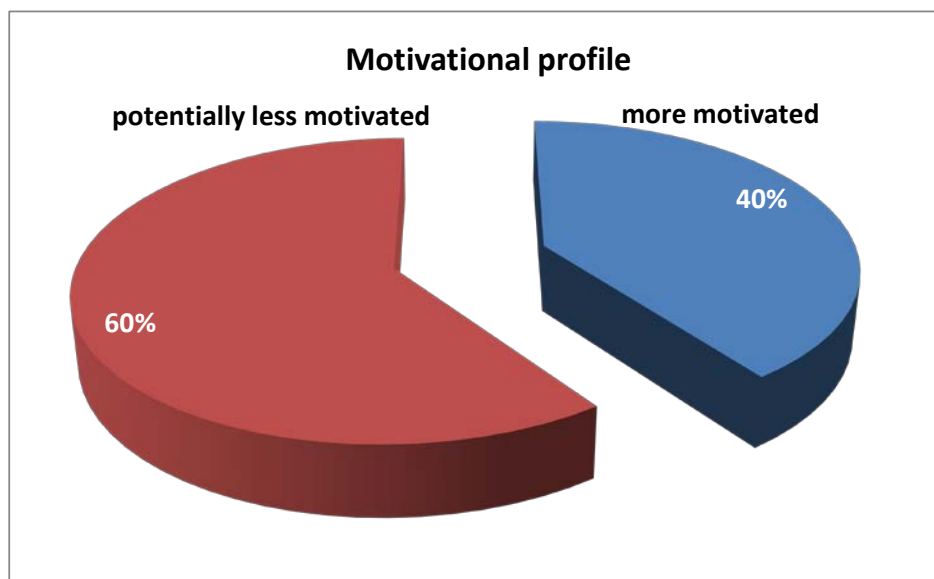


Fig. 2.
Identification of the motivational profile of the students (C1).

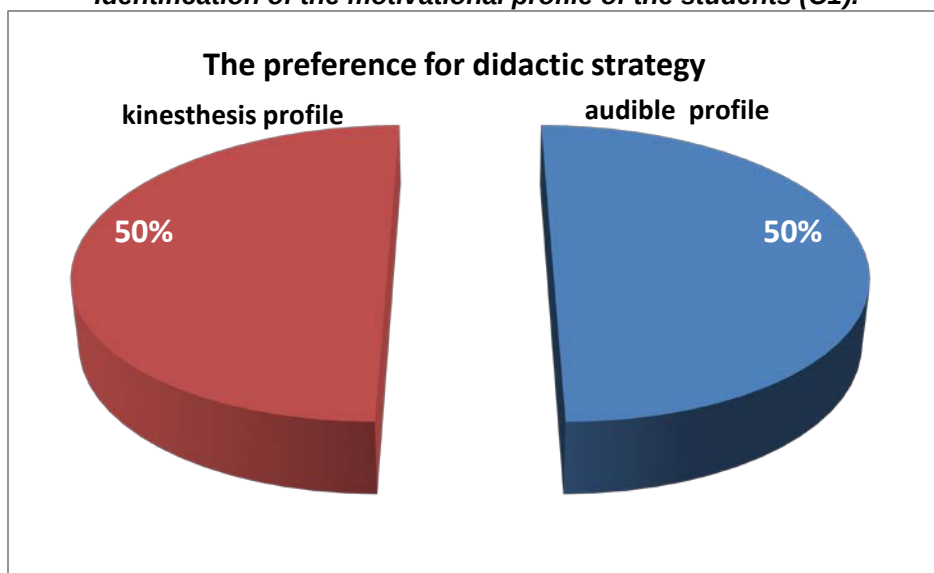


Fig. 3.
The profile of the students in terms of preference for didactic strategy (C2).

The result must be correlated with the preference of the students for didactic strategy (Fig. 3). According to the type of motivation were identified in the group the following percentage: 0% of the students were intrinsically motivated, 58.82% were extrinsically motivated and 41.18% were demotivated. As result, will be used those didactic strategies that involves discussions, oral explanations, practical experiments. These results were predictable, in correlation with the school performance of the students. Therefore, the students considered in this paper were the perfect individuals for action. They were monitored during one studying year. A comprehensive project based on teaching and learning by engaging students in investigation was prepared. In this period the teaching and learning methods were diverse and transparent.

The topic selected for the present study was Technology of Wood Processing. It is an important specialty discipline for the students who want to follow a career in this field. Teacher generated the own didactic strategy as answer to the basic questions:

...How do I act? → What did I do? What will I do? What would I be able to do?

In this context, were used the didactic methods adapted to the motivational profile of the group: discussion, explanation, supervised observation, heuristic conversation, the independent observation, "panel" method, experimental methods. Different visual aids, such as posters, practice equipment, motivated learners by capturing their attention and curiosity. Moreover, the teacher encouraged the students in their development and promoted a favourable attitude toward learning. An incentive (that is likely to motivate an individual at a particular time) including small bonuses from the teacher is promoted. Extracurricular activities were achieved. As results of these strategies, the same students became more motivated with 10% in the next studying year, as seen in Fig. 4.

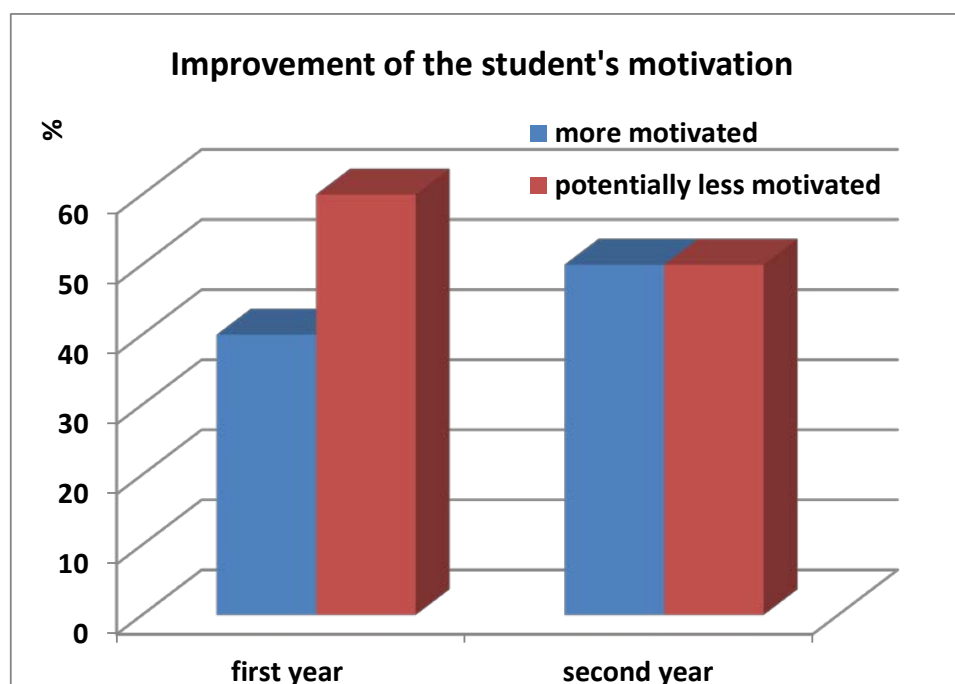


Fig. 4.

The motivational profile of the student before and after teaching-learning project (Muszka 2018).

At the beginning of this study, in the first year, 60% of the students presented a potentially motivation deficit and 40% were more motivated. After one year of teaching and learning the high school students had better scores for motivated category compared with the first year. These measures should be continued and the evolution of the youngsters will be monitored in terms of learning and intrinsic motivation.

STRATEGIES TO MOTIVATE STUDENTS TO DECIDE FOR THE FIELD OF WOOD ENGINEERING

The motivational orientation and cognitive engagement in schoolwork are important in engineering education and consequently in wood engineering. The ability to get motivated to study can have a positive effect on a student's study levels and grades. The right motivation will allow them to study more focused and directs the behaviour towards a certain goal. Motivation is not always directly. Transmitting knowledge could be the easiest part of the teaching. More challenging is the task of providing students the skills they will need **to be professional and responsible** in their field (Felder 2000).

As engineering educators we should include or develop in our lectures those methods of teaching and learning that help the students **to solve a problem, to communicate, to have a collaborative work with their team, to be self-aware, to have lifelong learning skills.**

In Fig. 5 are evidenced few compiled strategies for learning motivation in engineering training, as Felder (2000) and Phang (2012) recommended in theirs' study.

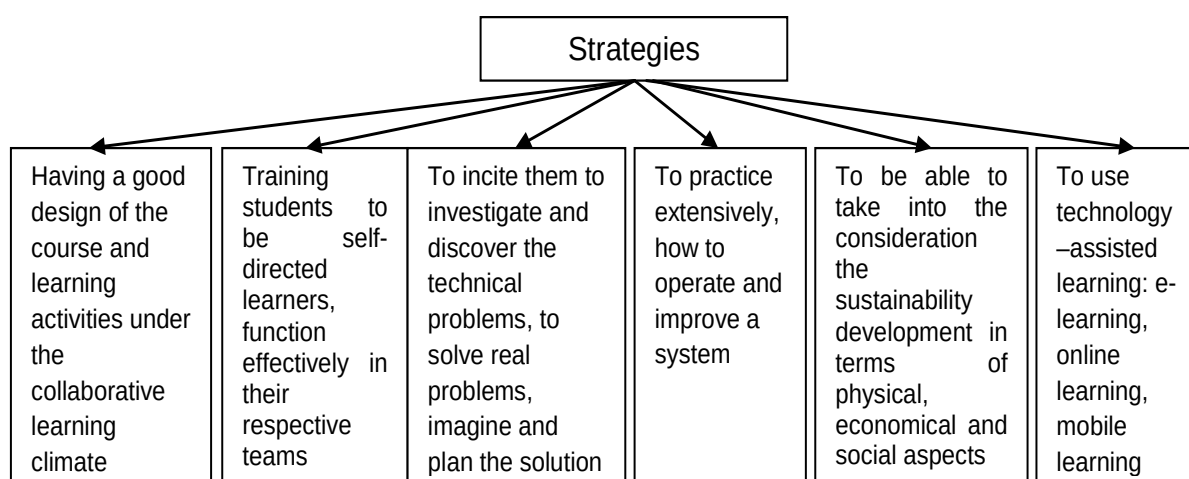


Fig. 5.
About learning motivation strategies in engineering education.

The teachers have to consider the following aspects in elaboration of strategies for motivation:

- There is no universal didactic strategy. There are different teaching strategies for different learning situations.
- To find an efficient strategy and to prove the learning results.
- To adapt the strategies towards the knowledge level, skills, attitude and motivation level of the students.

CONCLUSIONS

Nowadays the lack of motivation among our last generation of young people is a problem that can be found in the daily agenda of teachers. The challenge is more noticeable as the demotivated students come from different levels of education: high schools or universities. Therefore, to teach students with such psychologic profile was more stimulating.

The high school students monitored during one studying year registered an improvement in their learning motivation after using the adapted teaching methods, in accordance with the motivational profile.

This study is original and might be valid for engineering students. An engineer of the 21st century should be educated and motivated within a new approach of engineering, in accordance with 21st century requirements. The motivation for learning still remains an open topic and a permanent concern. The following quotes could be very motivating for our students:

"Engineering stimulates the minds"- Bruce Dickinson

"Believe you can and you are halfway there"- Theodore Roosevelt

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