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Issues of Online Distance Education: Learning Motivation of Current and Prospective School Teachers

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Abstract

In this work, LM in three categories of students – motivated, unmotivated and overmotivated – was explored. Fifty graduate students, which were current and prospective school teachers and took the author’s online psychology courses in 2012-2013, participated in the study. The research methodology included developing the rules of coding students’ course work, designing the 100-scale of LM for representing their individual as well as collective data, and collecting info about students’ academic achievement in this course. According to the results, students’ LM has two co-existing components – *pragmatic* (grade-oriented) and *cognitive* (knowledge-oriented). Three mentioned categories of students differ in quantity as well as quality of their LM. Further analysis showed that a) motivated students constituted a majority 74% of the population; they were rather pragmatically than cognitively oriented learners, b) unmotivated (problem) students, whose even pragmatic motivation was very low, represented 18.5% of the population, and c) overmotivated (enthusiastic) individuals that is, curious, and eager to get knowledge without being encouraged or rewarded, constituted the smallest part 7.5% of the total population. Considering these results in a wider socio-cultural context, the author suggests that prevalence of pragmatically motivated students among current and prospective school teachers, the shortage of enthusiastic learners and growth of problem learners can be possible significant causes affecting quality of the modern US primary school education.

Keywords: learning motivation, pragmatic (grade-oriented) vs. cognitive (knowledge-oriented) motivation, problem students, enthusiastic learners, current/prospective school teachers

Introduction

Beginning in the early 1990’s in the American educational periodicals and on educational forums in the electronic networks, specialists have been actively discussing failures of national primary school education. Conducting the cross-cultural research, scholars have repeatedly stated the American school students’ poor preparation in natural disciplines, especially, math (Stigler & Hiebert, 1999). In the recent years, there appeared articles about school students’ underachievement in other subjects as well (Hood, 1993; Albada, 2010; Report: Half of U.S. Schools Fail Federal Standards, 2011; Crotty, 2012; Khazan, 2012). The administration is taking various measures to address the present situation; one of them involves dismissing of “the bad school teachers”, namely those that are incompetent and lack motivation (Meador, 2014; Most Americans Want Easier Way to Fire Bad Teachers; 2010).

Indifferent and careless school teachers cause much harm to the society. Remarkably, a lack of motivation may display itself long before individuals come to school settings to teach – in their students’ years. They learn to become educators the same way they eventually will work as

educators. That's why we made an attempt to study learning motivation (LM) in students who are current and prospective school teachers.

Theoretical Frame: the Concept of Learning Motivation and its Study

The phenomenon of LM has been explored in modern psychology and educational practice since the beginning of the last century. However, there is no agreement in how it should be termed. Often the concept of *interest* is used to describe a stimulating role of motivation in learning (Krapp, 1999). LM is also defined as a factor arousing, persisting, sustaining, and directing behavior in school (Skinner, 1947). Authors use *desire* and *drive* as synonyms for LM. Motivation is posited as a synthesizing factor for human cognition and affect known as fundamental aspects of any functioning including learning. In the last few decades, the term *academic motivation* became very popular (Vallerand et al., 1992, 1992; Frontier et al., 1995; Green et al. 2006). Despite of the variety of terminology, the actual subject being studied is LM.

“Motivation is a desire for and movement toward special goal. It is more than a wish or a day dream: true motivation awakens and sustains actions that propel a person closer to a goal. At its base, motivation is also a search for personal meaning and a reflection of a person's deepest values” (Mwenda, 2012). This definition emphasizes that motivation determines not only what people do, but also how they reason what they do. Such a multifaceted understanding of motivation is important because it exposes its specifics in learning. And LM can be defined not only as the student's desire to reach some educational goals, but also as his/her acceptance and perception of the educational goals, tasks, and requirements as his/her own personal and meaningful values.

Scholars distinguish between intrinsic and extrinsic motivation, “based on the different reasons and goals that give rise to an action” (Thoonen et al., 2011). When describing students' motivation to learn, they define intrinsically motivated students as undertaking an activity “for its own sake, for the enjoyment it provides, the learning it permits, or the feelings of accomplishment it evokes” (Lepper, 1988). Extrinsically motivated students perform in order “to obtain some reward or avoid some punishment external to the activity itself” (Lepper, 1988); they “do something only because it leads to a separable desired outcome” (Thoonen et al., 2011). Intrinsic behavior does not require a reward, and it results in high-quality learning (Ryan & Deci, 2000).

Along with the concept of motivation, the concept of amotivation was introduced, although later. In the last decades the new phenomenon has been actively researched (Vallerand & Bissonnette, 1992).

To study LM, specialists tend to use interviews and surveys measuring students' perceptions and opinions (Fortier et al., 1995; Pakulina & Ket'ko, 2010; Thoonen et al., 2011). Another method is based on the analysis of products of human labor and creativity which reflect in-depth personal characteristics. Being more direct, the latter is at least as, or even more objective and efficient than the prior. This method (sometimes in a combination with a survey) is fruitfully used by educators nowadays (Hartnett, 2010; Hartnett et al., 2011; Dadach, 2013). We also use this method for our study of LM. One's activity is the best projection of one's personality and motivation, and among many human activities learning is probably especially significant.

Research Tasks and Methodology

In this work, three major tasks were set: to study how LM differs in its quantity and quality in three categories of students: motivated, unmotivated (problem), and overmotivated (enthusiastic) students. It was also explored how participants' LM influenced their academic achievement within a new and based on informational technologies learning environment.

The investigated population consisted of fifty students, current and prospective school teachers, who took the author's online psychology course *Child Development and Learning in the Cultural Context*. The study was conducted within two semesters: in fall of 2012 with twenty participants and in fall of 2013 with thirty ones. We will name them the A-, and B- groups.

The research methodology included the analysis of the students' coursework submitted to the course site and mathematical analysis of the collected data. To analyze students' course work, we used the criteria for recognizing unmotivated, motivated, and overmotivated students, rules of coding students' data, and the 100-scale of LM for representing students' individual as well as collective data that were developed and designed by the author in her previous similar research (Toom, A., 2013; 2013). Also, at the end of the semesters, students' final course grades were collected and compared with their LM. The Pearson's Correlation coefficient was calculated.

The hypothesis consisted in the following. There were certain requirements determining the way in which the coursework should be done to be accepted and graded. If a student met those requirements, we concluded that s/he had LM; a failure to meet these requirements was interpreted as lack of LM.

Quantification of Learning Motivation

The Online Course Content and Requirements

Homework assignments (HM). Each assignment consisted of two parts: reading the textbooks or Internet articles provided by the instructor and use this information to answer questions also provided. There were eleven homework assignments; each of them typically included three questions. The activity was mandatory. Requirements for this activity included:

1. Timely submission: each assignments should be submitted by a due date scheduled
2. Sufficient quantity: all questions should be answered completely
3. Sufficient quality: all answers should be brief (no longer than 60-80 words), clear, to the point; key words/phrases in every answer should be formatted as bold face.

Group discussions on the Discussion Board (DB). There were five discussions; each of them was devoted to one psychological or educational issue related to the course topic. Students were expected to respond to a question posted by the professor, share their experience, and exchange opinions with classmates. The activity was mandatory. Requirements for this activity included:

1. Timely submission: responses should be posted by a due date
2. Sufficient quantity: at least two responses ought to be posted for each discussion – one response to the professor and the other to any classmate; at least two references should be provided for each discussion forum
3. Sufficient quality: responses were expected to be substantial, supported by the student's personal educational experiences and the references found in e-libraries or e-data bases.

The Final Research Paper (RP). One research paper had to be written on the topic “Comparative Analysis of Different Theoretical Approaches to Child Development and Learning”. The activity was mandatory. Requirements for this activity included:

1. Timely submission: research papers must be submitted by a due date
2. Sufficient quantity: bibliography and the paper outline should be submitted preliminary
3. Sufficient quality: the paper content should correspond to its topic, and the topic should be developed in full

The Educational Forum (EF). A special forum on the DB was open, and current educational, scientific, and administrative news in articles and on videos about children without and with special needs were presented there. There students could discuss news and place their own findings. Participating in this activity was optional. No requirements were given.

The Principles of Coding Data

All students’ learning activities and actions that comprised them were recorded in the course site, analyzed and coded accordingly to their correspondence to the course requirements. Three characteristics of students’ coursework were measured: temporal, quantitative, and qualitative; each allowed values 0, 1, or 2.

Coding homework assignment:

1. Temporal characteristic: a missing homework received 0; a timely submission received 1; a submission done in advance (more than a week before a due date) received 2.
2. Quantitative characteristic: homework with two missing answers received 0; homework with one missing answer received 1; homework with all answers received 2.
3. Qualitative characteristic: homework with at least one incomplete or incorrect answer received 0; homework with all complete and correct answers received 1; homework with at least 2 answers out of 3 expressed “briefly, clearly, and to the point” received 2.

Coding DB post:

1. Temporal characteristic: missing responses received 0; timely responses received 1; responses posted in advance (more than a week before a due date) received 2.
2. Quantitative characteristic: one or less responses received 0; two responses received 1; more than two responses received 2; one or less reference received 0; two references received 1; more than two new references (not found by classmates) received 2.
3. Qualitative characteristic: a response missing or not including a personal experience received 0; a response presenting a personal experience received 1; if a student expressed a new idea stimulated by references or the discussion, his/her response received a “2”.

Coding the Final Research Paper:

1. Temporal characteristic: missing paper or a late submission received 0; timely submission received 1; advanced submission (at least a week before a due date) received 2.
2. Quantitative characteristic: missing preliminary bibliography and paper outline received 0; bibliography and outline that needed revising received 1; complete bibliography and correct paper outline received 2.

3. Qualitative characteristic: missing paper received 0; paper needed revising received 1; complete and rich in content paper received 2.

Coding participation in the Educational Forum:

1. Quantitative characteristic: no attendance received 0; one attendance received 1; two and more attendances received 2
2. Qualitative characteristic: no participation received 0; participation in discussions without sharing personal experiences received 1; active participation with sharing personal experiences and contributions in a form of new Internet resources received 2.

The Scale Design and Data Representation

The 100-point scale of LM was designed for the author's specific course with its unique content and certain requirements. To develop it, four hypothetical students were invented. Two of them were called *perfectly motivated* and *perfectly unmotivated* students; they determined the left-most and right-most points of the scale. These individuals do not exist in reality; they with their highest and lowest scores were needed for mathematical transformations of the real students' data. Two other imaginary individuals were *the lower boundary* and *the upper boundary* students. They were supposed to separate results of motivated, unmotivated, and overmotivated students from each other.

The data of four hypothetical students was coded according to principles described above. The row data were calculated and scaled. First, all the four values representing four types of the coursework were normalized: in each category the score was divided by the maximum possible score, and then a weight of 25% was attributed to all of them.

The course work of each participant of the study was coded identically. So, after these necessary mathematical transformations, every student hypothetical as well as real could be characterized by a tuple of four values, and their sum represented his/her LM manifested in the course.

The perfectly motivated student does everything in the best way. He is not just always on time, he is consistently ahead of the course work' due dates. He not only meets requirements regularly, he always exceeds them. He has the best scores for each type of the coursework. LM of this student is 100% and determines the right-most points of the scale.

The perfectly unmotivated student systematically violates all aspects of the course policy, does not study, and fails. He has a 0 for each type of the coursework. LM of this student is 0% and determines the left-most point of the scale.

The lower boundary student is modeled according to the college's policy determining which academically underachieving students should still be given a chance to eventually complete the coursework and receive a passing grade. Such a student should submit the maximum of assignments required (except the final paper) and complete at least 50% of the coursework by the end of the semester. This students' row and scaled tuples of four values are shown in the Table 1. The sum 26% should be considered the boundary on the scale separating results of unmotivated students from motivated ones.

The upper boundary student is designed according to the author's pedagogical experience: if something not quiet ordinary occurs in a student's activity once, it might be random. However, if it happens twice, it points, rather, to a possible consistency. Such a student over exceeds every

requirement for every type of coursework at least twice. Also, such a student prepares bibliography, the paper outline and the final paper that are accepted from the first attempt. This student's LM and all corresponding data are shown in the Table 1. The sum 69% is the boundary separating results of motivated students from overmotivated ones.

Table 1

The Hypothetical Students' Raw and Scaled Data

Hypothetical Students:	Raw Data				Scaled Data				
	HW	DB	RP	EF	HW%	DB%	RP%	EF%	Total
Perfectly Motivated	66	40	6	4	25%	25%	25%	25%	100%
Perfectly Unmotivated	0	0	0	0	0%	0%	0%	0%	0%
Upper Boundary	48	28	5	2	18.2%	17.5%	20.8%	12.5%	69%
Lower Boundary	44	15	0	0	16.6.0%	9.4%	0%	0%	26%

Note: HW = homework; DB = discussions; RP = research paper; EF = educational forum

On the Figure 1, the results of the A-group of students are distributed on the scale. Points 26 and 69 show the lower and the upper boundaries for results of motivated students. Twenty participants are displayed as stick-figures next to the corresponding locations on the axis with their individual LM scores on the "faces." Most students of the A-group are motivated and located in the middle part of the scale. Three student (with their scores 70, 74 and 88) located to the right of the middle area's upper boundary are overmotivated, and two students (with their scores 16 and 20) located to the left of the lower boundary are unmotivated.

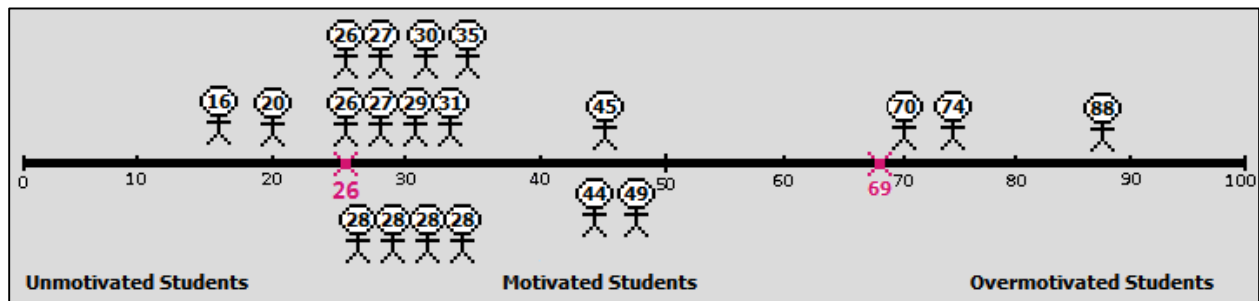


Figure 1. Graphical representation of the A-group students' scores distributed on the scale of Learning Motivation

On the Figure 2, the results of the B-group of students are distributed on the scale. Most students of the B-group are motivated and located in the middle part of the scale. No students are located to the right of the middle area's upper boundary, that is, there are no enthusiasts in the B-group. Seven students (with their scores 14, 22, 24, and 25) located to the left of the lower boundary are unmotivated.

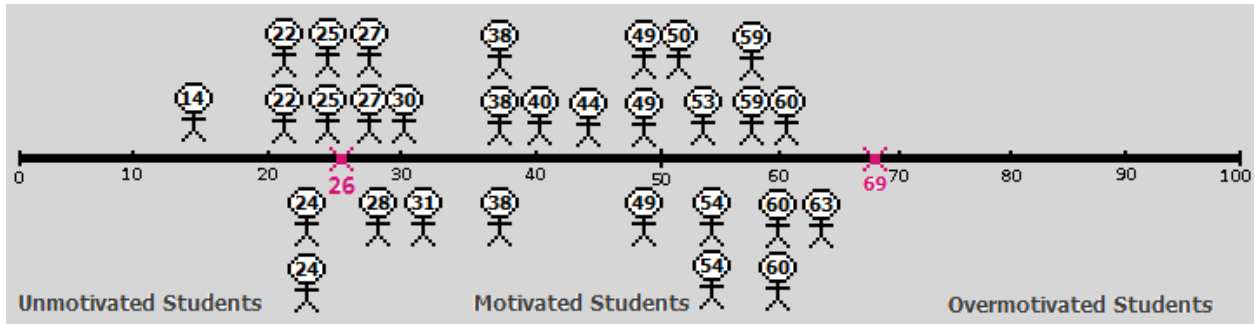


Figure 2. Graphical representation of the B-group students' scores distributed on the scale of Learning Motivation

The Results

Analysis of the Investigated Population

Motivated but not outright enthusiastic students constituted a majority in both investigated groups: 75% in the A-group and 73% in the B-group. Unmotivated students constituted 10% in the A-group and 27% in the B- group. Overmotivated students constituted 15% in the A-group and were not present in the B-group. It is shown on the Figure 3.

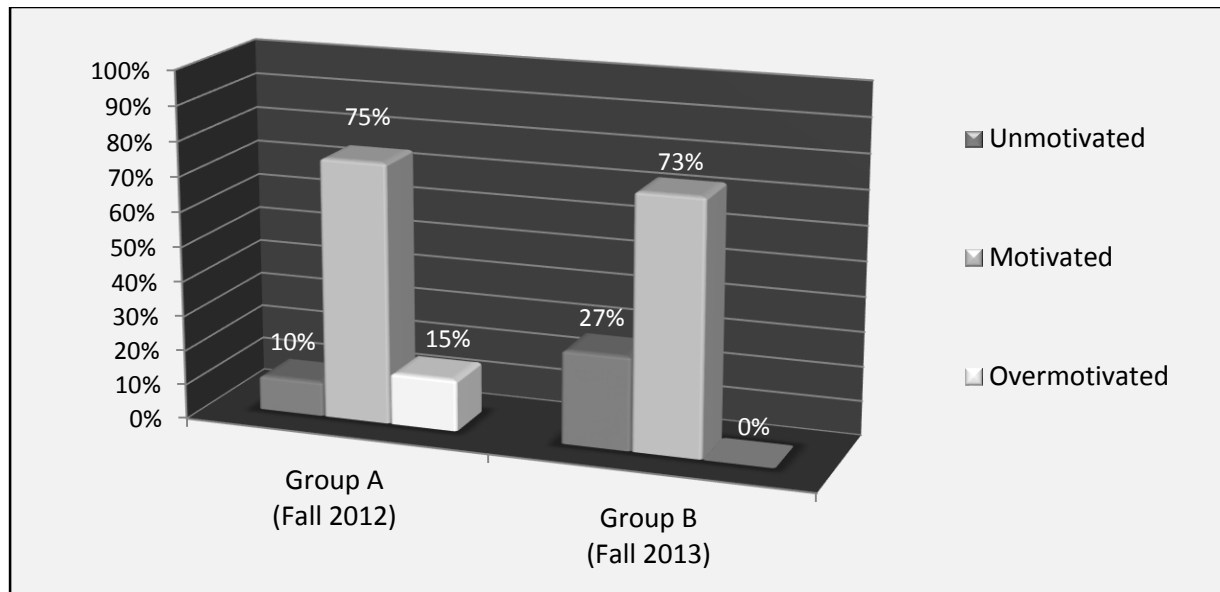


Figure3. Percentage of unmotivated, motivated, and overmotivated students in the investigated A-and B-groups taken the course in 2012-2013 academic years.

The Correlation between LM and Academic Performance

To find out how students' academic performance depended on their LM manifested in the course, we studied the correlation of their motivation with final course grades. The Pearson's Correlation Coefficient was calculated with the use of the formula:

$$K = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{n \sum x^2 - (\sum x)^2} \sqrt{n \sum y^2 - (\sum y)^2}}$$

where $x = (x_1 \dots x_n)$ and $y = (y_1 \dots y_n)$ are distributions of the two chosen variables; and n is the number of students in the group (How to Compute Pearson's Correlation Coefficient).

The study revealed a high correlation coefficient $K_{LM,FG}=0.61$ between students' LM and their academic achievement for the A-group and $K_{LM,FG}=0.52$ for the B-group.

Reliability and Validity of the Results

In each of two semesters, the category of motivated students constituted the highest percentage (see Figure 3); it proves reliability of the result. The result reflects the fact that students enroll into educational programs for certain reasons: some have already worked in school system, some others were preparing for that, – and obtaining the Master's degree is an important step for their professional growth and career.

It was found that students' academic achievement positively correlates with their LM. The correlation coefficients are high for two groups of students studied the same subject with the same professor in different semesters. Similarity of this result for two different semesters proves its reliability. Additionally, the result is supported by discoveries made in other studies of LM (Fortier et al., 1995; Singh et al., 2002; Broussard & Garrison, 2004; Green et al., 2006); this points to the validity of the obtained results.

Discussion

Structure of Learning Motivation

Two components of students' LM – grade-oriented and knowledge-oriented – were described in our study under the names *pragmatic* и *cognitive*. In essence, they link back to the familiar *intrinsic* and *extrinsic* motivation. However, for our specific study terms *cognitive* and *pragmatic* seem to be more adequate. This usage of terms is consonant with some other authors' ideas about the content of LM (Csikszentmihalyias, 1975; Whitney & Hirsch, 2007).

The components are co-existing, interrelated, and both are necessary for fruitful learning. However, unlike the pragmatic motivation that everybody (even unmotivated students) had, in our study the cognitive motivation was noticed in a few. The ratio of the grade-oriented students to those who were both grade- and knowledge-oriented was approximately 12:1.

This is understandable: cognitive LM is an infrequent phenomenon. The explanation is analogous to A. Maslow's interpretation of the hierarchy of motives. Physical needs (for food, shelter etc.) and the need for safety are located at the bottom of the hierarchy and are applicable to everyone. The more spiritual a motive is, the higher it is located, the less frequent it is. Thus, the motives for self-actualization or knowledge are a privilege of a few (Maslow, 1970). Similarly, the cognitive component of LM, as non-materialistic and spiritual by its nature, is at a higher position in the structure of LM and exhibited by a few.

Three categories of students – unmotivated, motivated, and overmotivated – differed in quantity as well as quality of their LM. The more complex LM was, the stronger it was. Students who combined pragmatic and cognitive types of LM had the higher scores on the scale.

The students' final grades highly correlated with their LM. However, a further analysis of the data showed that the dependency was only unidirectional. That is, highly motivated students tended to have good grades, but a good grade did not always indicate a high LM. According to our online

course policy, for being successful it was enough to follow the instructions, meet requirements, and timely provide correct and informative mandatory assignments. That's why students lacking cognitive LM also could have good grades.

The Learning Style of Unmotivated Students

Unmotivated students are worse than others in all indicators of their activity. They miss their homework. If they submit assignments, their assignments have missing answers. If answers are present, many of them are incomplete and incorrect. Such students often miss discussions with classmates on the Discussion Board. If they participate, their responses are unsupported by references and personal experience. They are late with their Final Research Paper or their Bibliography is insufficient. Finally, they never participate in optional activities because they do not even know about their existence. Their knowledge of the course site and their computer skills are poor. These students turn out to be poorly adjusted to a new learning environment and seem not to have a desire for acquiring new learning skills; their enrollment into the online courses is probably a mistake.

As the results show, they lack LM because of their incompetence as computer users. Another factor preventing them from the successful study in the new learning environment is psychological: they lack such characteristics as cognitive curiosity and self-discipline that are responsible for academic performance and very closely interconnect with LM.

Unmotivated students constituted 10% of the A-group and 27% of the B-group. The percentage of unmotivated or problem students tends to increase as semesters are progressing.

The Learning Style of Motivated Students

Motivated students follow most instructions of the course exactly as they are given. Neither more, nor less. Sometimes one of the students belonging to this category does an additional work or some others miss one of the activities, but it is not quite typical.

Their course submissions are timely. Their homework assignments are usually complete and correct. To the discussions on Discussion Board, they bring two required postings and two required references needed to support their point of view. Their Final Research Paper usually needs some revision and bibliography is insufficient, but they correct all mistakes before the semester is over.

They perform only the coursework for which they are graded and ignore optional activities offered for their professional growth. They never come to the optional educational forum offered in the online course considering it a waste of time; they neglect it because the activity is not rewarded. Pragmatic interests prevail in them, and their main guiding principle is maximizing the grade and avoiding learning that does not contribute to the grade.

Actually, an attitude found in many of our motivated students corresponds to the values of modern society: «time is money», and people prefer not to spend their time and effort on anything that does not bring immediate profit (USA – Language, Culture, Customs and Etiquette). The question still arises if this philosophy is appropriate for educators.

Motivated students constituted a majority 75% in the A-group and 73% in the B-group. Actually, it is the majority of the whole investigated population. They were responsive, responsible, and successful individuals. However, they were pragmatic learners.

The Learning Style of Overmotivated Students

Overmotivated students are better than others in all indicators of their activity. They are not just on time – they are always ahead of the due dates for their course work. They not only meet requirements regularly – they always exceed them. Their homework is always complete, correct, and contains some new information that was not provided by the reading materials offered in the course; they find this relevant information on their own. Discussing the issues of the subject with their classmates on the Discussion Board, they also over perform. Instead of two required responses they tend to submit five. Instead of two Internet resources for supporting their opinions, they would find five or six. Additionally, their responses are very high in quality – describe personal experiences and have new ideas. Their Final Research Paper needs no revision. From the very first attempt it is complete and rich in content.

These students perform the optional assignments as well as required because they want to receive knowledge relevant to their professional interests even if it is not immediately rewarded. Like everybody, they appreciate grades, but curiosity has a higher priority for them.

Overmotivated or *enthusiastic* students constituted 15% of the A- group and 0% of the B-group. The percentage of enthusiastic students tends to decrease as semesters are progressing.

Conclusions

Two different, interrelated, and co-existing components of LM observed in the study link back to the familiar *intrinsic* and *extrinsic* motivation. Students' LM within the context of online learning environment was found to have the nature similar to that which was described by the theorists and explorers of traditional class settings.

Motivated participants constituted a majority of the total investigated population. They were reasonable, responsive, and successful individuals who received good grades for the course. However, they were pragmatic or grade-oriented learners. The percentage of overmotivated or enthusiastic and knowledge-oriented students is relatively small and tends to decrease as semesters are progressing. At the same time the percentage of unmotivated or problem students tends to increase.

The study was conducted in one statistically average American college. However, the tendencies that were made out do not characterize just one educational institution. The author suggests that they represent general tendencies in contemporary education, specifically, online distance education.

Considering the results of this study in a wider socio-cultural context, the author suggests that the prevalence of pragmatically motivated students among current and prospective school teachers, the shortage of enthusiastic learners, and an abundance of problem students can be possible significant causes affecting quality of the modern US primary school education and school students' academic performance. In either case, a further study of teachers' motivation seems to be a promising scientific direction.

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