

MATERIAŁY – KOMUNIKATY
– SPRAWOZDANIA Z BADAŃ

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ENGAGED ACADEMIC E-LEARNING – RESEARCH REPORT

1. Introduction

The modern era, based on the culture of liquid modernity¹ is characterized by „gliding over the ideas, suggestions and novelties without any engagement, permanence and foundations, for the change is the most valuable”². „In the world of liquid modernity, one should not become attached to anything one does, nor to one’s past. The current identity is to be worn like a shirt that can be exchanged, when it wears out or goes out of fashion. One should forget about what one has learnt and leave his or her experiences with no remorse – today such recommendations set new life strategy and new rationality of the liquid modernity era”³. In the face of such uncertain times, academic education faces new problems, challenges and expectations. It goes beyond the university walls and finds its place in the virtual space provided by the Internet to make itself more available and common. To main-

¹ Z. Bauman, *Kultura w płynnej nowoczesności*, Warszawa 2011.

² Z. Węgrzyn, *Kultura niezaangażowania jako konsekwencja płynnej nowoczesności*, in: *Rozum, świat, zaangażowanie*, eds. M. Żardeckiej-Nowak, W.M. Nowaka, Rzeszów 2012, p. 210.

³ *Ibidem*, p. 211.

tain their position, universities should be able to exploit the potential offered by interactive digital technologies to the benefit of the higher quality of academic training and the most engaged students being in the centre of the university's enterprises. In the New Dictionary of Polish Language we can read that *to engage* (in Polish: *angażować się*) is to „actively participate in something”⁴, or to „involve oneself in some activity”⁵. The term is also understood as a controllable effort, for „one can decide on a degree to which one involves oneself in the activity”⁶.

Rosemary M. Lehman and Simone C.O. Conceição⁷ claim that one of the main problems of online education is the lack of motivation and engagement of the learners. On the other hand Martina Nehme⁸ believes that these issues can be dealt with through the development of social relationships between learners and teachers, which may reduce not only the fear of students, but also help teachers in engaging and stimulating learning in the online environment.

In addition Rita-Marie Conrad i J. Ana Donaldson⁹ suggest several elements determining the involvement of learners including objectives established by the learners; adequate resources, group work, interdisciplinary and authentic tasks, formative assessment as the interactive evaluation of students' progress and their level of understanding of the teaching material. Based on years of successful experience in traditional and on-line teaching I can say that in the physical environment it is much easier to influence students, engage them in the classes and discussions. In the virtual environment, all activities have to be planned in advance, otherwise the learners might feel frustrated and

⁴ *Nowy Słownik Języka Polskiego*, Warszawa 2002, p. 15.

⁵ *Ibidem*, p. 1208.

⁶ G. Mietzel, *Wprowadzenie do psychologii. Podstawowe zagadnienia*, Gdańsk 2003, p. 294.

⁷ R.M. Lehman, S.C.O. Conceição, *Motivating and Retaining Online Students, Research-Based Strategies That Work*, San Francisco 2014, p. 3.

⁸ M. Nehme, *E-Learning and Students' Motivation* (October 29, 2010). (2010) 20 *Legal Education Review* 223–239, <http://ssrn.com/abstract=2347142> [access: 1.04.2014].

⁹ R.M. Conrad, J.A. Donaldson, *Engaging the Online Learner. Activities and resources for creative instruction*, San Francisco 2011, p. 6.

simply lost. Those who acquire the same knowledge first traditionally, then online, are much more aware of its specific character and they expect not only to use the educational sources found online, but to actively participate and cooperate in the knowledge acquiring process and to take part in online meetings taking place in the real time¹⁰. Therefore, it seems essential to provide appropriate conditions to motivate and inspire young people to learn hard and to develop personally. For the learning process „allows us to experience elation and stimulation. It is a human activity that demands engagement equal to that given to other activities and that is the engagement in the learning process itself”¹¹. It can be a „fascinating project and a fantastic adventure for (a part of) humanity, and its discourse will set appealing axiological horizons, as long as it is governed by the principle of freedom of inquiry and criticism”¹². In this paper I would like to emphasize the meaning of engagement as an important criterion of the assessment of education effectiveness and online learning results.

These deliberations are underlain by the problem based learning and problem solving¹³. John Dewey¹⁴ points to valuable experiences in education, opportunities and needs of the learners, cultivation of individuality and active engagement in the learning process. Hence, the learners have to be more self-reliant and responsible for their own learning, which is not always easy. John G. Hedberg¹⁵ presumes that if the active participation of the learners is one of the main aims of e-learning, the teachers and designers should gain a better un-

¹⁰ It is also mentioned by: Ibidem, p. 6.

¹¹ R. Kleśta-Nawrocki, *Zaangażowanie w naukę*, in: *Zaangażowanie czy izolacja? Współczesne strategie społecznej egzystencji humanistów*, edited by J. Kowalewski, W. Piasek, Olsztyn 2007, pp. 76–77.

¹² A. Szahaj, *Postmodernizm a scjentyzm*, in: *Kultura jako przedmiot badań: studia filozoficzno-kulturoznawcze: prace ofiarowane profesorowi Jerzemu Kmicie w siedemdziesiątą rocznicę urodzin*, eds. B. Kotowa, J. Sójka, K. Zamiara, Poznań 2001, pp. 73–86, after: R. Kleśta-Nawrocki, op. cit., p. 76.

¹³ W. Okoń, *Nauczanie problemowe we współczesnej szkole*, Warszawa 1987; W. Okoń, *Wprowadzenie do dydaktyki ogólnej*, Warszawa 2003, pp. 208–226.

¹⁴ Por. J. Dewey, *Doświadczenie i edukacja*, Warszawa 2014, pp. 11, 37.

¹⁵ J.G. Hedberg, *Ensuring Quality E-Learning: Creating Engaging Tasks*, „Educational Media International” 2003, 40(3), 175–186.

derstanding of the construction of educational tasks having a significant meaning in stimulating and maintaining student's engagement. Charles Wedemeyer¹⁶ recognizes learner's engagement as a key factor conditioning didactic effectiveness of the online learning process. He emphasizes the great importance of the teacher, who is obliged to support his students and to induce their engagement by modelling, developing their reflective side, having his/her students actively participate in the classes and cultivating the relation between the members of the learners' community. Börje Holmberg¹⁷ on the other side, underlines the necessity of engaging a student in the assessment process of the usefulness of didactic materials, the freedom of choice when it comes to these materials and the interaction between those involved in the online learning process, which gives them the sense of belonging to the educational group. Maryellen Weimer¹⁸ claims that the teacher is still responsible for the teaching, but the decisions on the degree of engagement in the learning process are made by students. Robert Gagne and Marcy P. Driscoll¹⁹ believe that specific external conditions have to be met to improve the engagement of the online learners. These are: presentation of teaching strategy, various possibilities of communication and presentation of didactic materials, strong belief in success, positive attitude as well as teacher's feedback, supporting students' creativity and their original thinking. R. M. Conrad and J. A. Donaldson²⁰ believe that the sense of security and possibility of self-assessment should be added to the list.

¹⁶ Por. C. Wedemeyer, *Learning at the back door*, Madison 1981, after: R.M. Conrad, J.A. Donaldson, op. cit., pp. 6–7.

¹⁷ Por. B. Holmberg, *A Theory of Teaching-Learning Conversations*, in: Moore M. G. (eds.), *Handbook of Distance Education*, New Jersey 2007, pp. 69–75.

¹⁸ M. Weimer, *Learner-Centered Teaching: Five Key Changes to Practice*, Jossey-Bass, San Francisco 2002, <http://www.uwec.edu/CETL/resources/upload/LearnerCenteredTeachingFiveKeyChangestoPractice.pdf> [access: 15.08.2014].

¹⁹ Por. R.M. Gagne, M.P. Driscoll, *Essentials of learning for instruction*, Allyn & Bacon, Boston 1988, after: R.M. Conrad, J.A. Donaldson, op. cit., p. 7.

²⁰ Ibidem, p. 7.

2. Methodological assumptions of the research

This empirical study constitutes a continuation of the research I had been conducting in the academic year of 2013/2014, whose aim was to identify the activities and encouragement methods used by Pedagogy students at Nicolaus Copernicus University in Toruń²¹ on the course of online learning process. To improve representativeness of the results and to verify my previous theses, I have decided to conduct further research among students of various majors (English Philology, Polish Philology, German Philology, History, Mathematics, Finance and Accounting, Pedagogy, Management, Economics, Law), which has allowed me to present the issue of engagement and activities of the online learners in a wider and different perspective. The research was conducted in the academic year of 2015/2016 on a community sample consisting of 310 students of the Nicolaus Copernicus University.

With respect to cognitive goals I have set, following research problems were formulated:

- What is the relation between the number of courses taken online and the commitment of the level of engagement shown by students?
- What is the relation between the type of motivation used by students to learn online and their degree of engagement in the e-learning courses?
- What is the relation between different types of multimedia resources encouraging students to engage in the online learning and their actual engagement?
- What is the relation between teacher's support and the commitment of the level of engagement shown by students?
- What is the relation between activities sustaining engagement during online learning and the actual engagement shown by students?

²¹ M. Skibińska, W. Kwiatkowska, K. Majewska, *Aktywność uczących się w przestrzeni Internetu*, Toruń 2014, pp. 59–121.

- What is the relation between didactic endeavours designed to encourage the sense of belonging to an online community of learners and the engagement shown by students?

To answer these questions as accurately as possible, I have conducted a random sampling test among students of the Nicolaus Copernicus University. My assumption was that it will allow me to identify current state of the Internet use among students and academic teachers. The random sampling focused on collecting and compiling empirical data as well as contrasting the identified elements of the studied reality with literature.

In order to collect data I used an electronic questionnaire survey, which allowed for quick acquisition of information for analysis and study. The questionnaire included twenty questions, six of which were open question type and fourteen were closed question type. In this article, I presented only some of the results due to the limited size of the text.

3. Analysis of results

I have analysed basic descriptive statistics and conducted a series of Chi-square independence tests as well as Spearman's rho analyses. I set the significance level to $p < 0,05$.

Chi-square test is an adequate type of the test for analyzed data and with an appropriate number of observations its accuracy is satisfactory. All the analysis that I could do are based precisely on the chi square statistics for example logistic regression. Nonparametric tests with unfulfilled assumptions are even more accurate tests than parametric tests. In addition, parametric analysis are never done on the nominal variables and ordinal variables.

3.1. The relation between the number of courses taken online and the commitment of the level of engagement shown by students

As a first step I decided to verify whether any statistically significant relation occurs between the number of online courses taken by students and the degree of their engagement in these courses. To this end, I have analysed the data using Spearman's rank-order correlation. The choice of non-parametric analysis arose from the fact that both analysed variables were of ordinal nature. Results of this analysis turned out to be statistically significant: $\rho = 0,227$; $p < 0,001$, which means that the bigger number of courses were taken by students, the higher their level of engagement in these courses was. This means the greater experience in online teaching, the higher commitment of the level of students engagement is shown. Therefore, I suppose that the learner with the knowledge of this form of education knows that the commitment is extremely important to achieve high results.

3.2. The relation between the type of motivating factors used by students to learn online and their level of engagement in the e-learning courses?²²

In the next step, with the use of chi-square independence test I have verified whether any relation occurs between the type of motivating factors used by students to learn online and the commitment of the level of engagement into e-learning courses. In this case, the

²² The respondents assessed the degree of their involvement on the scale of 1–5. A rating of 1 means “no commitment” a rating of 5 “strong commitment”. The Indicators point to people uninvolved, very slightly involved, weakly engaged, involved and strongly committed. They should be adopted and understood in the following way: people not involved are those who do not show interest in the problems of the course, they do not take care of the relationship between participants, do not take their own initiatives, do not get involved in discussions, do not share their opinion, etc. Those who are deeply involved diligently perform their duties related to learning, they show interest in cooperation, they are willing to associate with others and share their knowledge and experience.

result also turned out to be statistically significant: $X^2(16) = 55,06$; $p < 0,001$. Percentage distributions indicate that the higher the degree of student's engagement was, the more often they were motivated by the teacher and educational materials, while those disengaged showed no specific motivation. Detailed results are presented in the following table.

Table 1
Analysis of the relation between the type of motivation used by students to learn online and their degree of engagement in the e-learning courses

		Degree of engagement in the e-learning courses					
		No engagement	2	3	4	Strong engagement	
motivation to learn online	co-participants	N	2	1	10	7	2
		%	22,2%	7,7%	12,3%	5,1%	3,7%
	own motivation	N	0	3	9	30	11
		%	0,0%	23,1%	11,1%	21,7%	20,4%
	the teacher	N	2	2	39	41	24
		%	22,2%	15,4%	48,1%	29,7%	44,4%
	educational materials	N	2	5	22	58	14
		%	22,2%	38,5%	27,2%	42,0%	25,9%
	Others	N	3	2	1	2	3
		%	33,3%	15,4%	1,2%	1,4%	5,6%
Generally	N	9	13	81	138	54	
	%	100,0%	100,0%	100,0%	100,0%	100,0%	

Source: own research.

Presented results show slight difference between arousing of motivation by a teacher and teaching materials.

It can be concluded that the high quality of e-learning materials and teachers having adequate competencies will contribute to maintaining motivation for distance learning.

4.3. Relation between the answer to the question: “What types of multimedia resources encouraged you to engage more strongly into the e-learning courses?” and the commitment of the level of engagement in these courses

Another chi-square independence test was performed to verify if any statistically significant relation occurs between students’ answer to the question “What types of multimedia resources encouraged you to engage more strongly into the e-learning courses?” and the degree of engagement in these courses. It turned out that statistically significant relations occur between the degree of engagement and multimedia resources, such as interactive exercises with self-assessment, webinars, graded exercises and interactive presentations. Percentage distributions indicate that students who claimed that interactive exercises with self-assessment, graded exercises and interactive presentations contributed to their engagement were indeed more engaged. Students who chose webinar as a source of their engagement were not engaged in the courses, but gave them 4 points on the engagement scale. There are no further statistically significant relations between analysed variables, which means that remaining variables do not co-occur in the analysed sample.

Table 2
Relation between the answer to the question “What types of multimedia resources encouraged you to engage more strongly into the e-learning courses?” and the degree of engagement in these courses

		Degree of engagement in the e-learning courses					
		No engagement	2	3	4	Strong engagement	
What types of multimedia resources encouraged you to engage more strongly into the e-learning courses?	interactive exercises with self-assessment	N	0	2	30	65	29
		%	0,0%	15,4%	37,0%	47,4%	53,7%
	Webinar	N	3	2	21	56	11
		%	37,5%	15,4%	25,9%	40,9%	20,4%
	e-consultations	N	2	7	31	59	16
		%	25,0%	53,8%	38,3%	43,1%	29,6%
	forum discussions	N	1	4	22	42	19
		%	12,5%	30,8%	27,2%	30,7%	35,2%
	e-mails from the teacher	N	0	1	19	33	9
		%	0,0%	7,7%	23,5%	24,1%	16,7%
	Quizzes	N	4	5	42	81	36
		%	50,0%	38,5%	51,9%	59,1%	66,7%
	mp3s	N	0	1	5	18	3
		%	0,0%	7,7%	6,2%	13,1%	5,6%
	graded exercises	N	3	4	42	75	39
		%	37,5%	30,8%	51,9%	54,7%	72,2%
interactive presentations	N	1	3	41	83	32	
	%	12,5%	23,1%	50,6%	60,6%	59,3%	
Wiki posts	N	1	1	5	11	0	
	%	12,5%	7,7%	6,2%	8,0%	0,0%	
tutorial videos	N	1	3	16	40	11	
	%	12,5%	23,1%	19,8%	29,2%	20,4%	
Generally	N	8	13	81	137	54	

Source: own research.

Table 3

Chi-square independence test statistic along with the significance of relation between the answer to the question “What types of multimedia resources encouraged you to engage more strongly into the e-learning courses?” and the degree of engagement in these courses

		Degree of engagement in the e-learning courses
interactive exercises with self-assessment	Chi-square	15,497
	df	4
	Significance	0,004
Webinar	Chi-square	11,113
	df	4
	Significance	0,025
e-consultations	Chi-square	5,098
	df	4
	Significance	0,277
forum discussions	Chi-square	2,552
	df	4
	Significance	0,635
e-mails from the teacher	Chi-square	5,389
	df	4
	Significance	0,250
Quizzes	Chi-square	5,496
	df	4
	Significance	0,240
mp3s	Chi-square	5,158
	df	4
	Significance	0,271
graded exercises	Chi-square	11,615
	df	4
	Significance	0,020
interactive presentations	Chi-square	14,746
	df	4
	Significance	0,005

Table 3
Chi-square independence test statistic cd.

		Degree of engagement in the e-learning courses
Wiki posts	Chi-square	4,803
	df	4
	Significance	0,308
tutorial videos	Chi-square	3,889
	df	4
	Significance	0,421

Source: own research.

The above indications show that interactive materials and performing of tasks by learners reinforced their commitment. This allows to conclude that it is important to develop appropriate and accurate materials. It forces students not only to absorb a content of learning materials, but also to discover information and to take a part in the process of learning.

3.4. Relation between students' answer to the question "Were you motivated by the teacher's support?" and the commitment of the level of engagement in the e-learning courses

The next step verified whether a statistically significant relations occur between students' answer to the question "Were you motivated by the teacher's support?" and the degree of engagement in the e-learning courses. To this end, an analysis was performed with the use of Spearman's rank-order correlation coefficient. The result turned out to be statistically significant: $\rho = 0,275$; $p < 0,001$. Correlation coefficient is positive and weak, which means that the more motivated students were by the teacher's support, the more engaged they were in the courses. Thus, the teacher who is aware of the benefits arising

from the use of different support strategies during learning course gives students a better chance to finish it successfully.

3.5. Relation between teacher's strategies for motivating students and the level of students' engagement in the e-learning courses

To verify whether any statistically significant relation occurs between teacher's strategies for motivating students and the level of students' engagement in the e-learning courses, another chi-squared independence test was performed. It showed that the only statistically significant relation occurs between the degree of students' engagement and motivation through rewards. Percentage distributions indicate that those who claimed that they were motivated by a reward on the teacher's part were indeed more engaged in learning. Remaining motivation methods were not in any way related to the degree of engagement in the courses.

It follows that nothing motivates students as rewards. It follows that the students do not recognize the importance of other ways to motivate them by the teacher. Thus the prize, regardless of its form seems to have a greater value and effectiveness on the learner.

The education system often puts the emphasis on the use of prizes as a key motivator for students who are accustomed to rewarding from an early age and they expect this.

Table 4
Analysis of the relation between teacher's strategies for motivating students and the degree of engagement in the e-learning courses

		Degree of engagement in the e-learning courses					
		No engagement	2	3	4	Strong engagement	
How did your teacher motivate you to learn?	teacher complied with the dates of test assignments, online consultations etc.	N	7	10	66	100	36
		%	77,8%	76,9%	83,5%	75,8%	69,2%
	thanks to clear rules during the course and communication	N	4	9	51	96	37
		%	44,4%	69,2%	64,6%	72,7%	71,2%
	teacher reacted to students' signals	N	2	5	32	70	25
		%	22,2%	38,5%	40,5%	53,0%	48,1%
	maintained friendly atmosphere	N	5	9	42	81	28
		%	55,6%	69,2%	53,2%	61,4%	53,8%
	controlled regularity of logging in to Moodle system	N	2	1	13	26	12
		%	22,2%	7,7%	16,5%	19,7%	23,1%
used active teaching methods	N	2	4	32	75	27	
	%	22,2%	30,8%	40,5%	56,8%	51,9%	
rewarded the learners	N	0	7	25	63	22	
	%	0,0%	53,8%	31,6%	47,7%	42,3%	
used group assignments	N	3	1	15	37	7	
	%	33,3%	7,7%	19,0%	28,0%	13,5%	
Generally	N	9	13	79	132	52	

Source: own research.

Table 5
Chi-square independence test statistic along with the significance of relation between the answer to the question “How did you teacher motivate you to learn?” and the degree of engagement in the e-learning courses

		Degree of engagement in the e-learning courses
teacher complied with the dates of test assignments, online consultations etc.	Chi-square	4,176
	df	4
	Significance	0,383
thanks to clear rules during the course and communication	Chi-square	3,147
	df	4
	Significance	0,534
teacher reacted to students' signals	Chi-square	4,933
	df	4
	Significance	0,294
maintained friendly atmosphere	Chi-square	2,273
	df	4
	Significance	0,686
controlled regularity of logging in to Moodle system	Chi-square	1,928
	df	4
	Significance	0,749
used active teaching methods	Chi-square	8,572
	df	4
	Significance	0,073
rewarded the learners	Chi-square	11,724
	df	4
	Significance	0,020
used group assignments	Chi-square	7,313
	df	4
	Significance	0,120

Source: own research.

It follows that rewarding may prompt learners to put more effort in to their learning. Rewarding is an important factor in motivation, provided that it is applied skilfully.

2.6. Relation between actions supporting involvement in the course of learning in the form of e-learning and the degree of engagement in the e-learning courses

In the next step, using another chi-squared independence test I have verified the relation between students' answer to the question "Which activities maintain your engagement during online learning?" and the degree of engagement in the e-learning courses. Its results proved that the degree of engagement is significantly related to students' possibilities of learning according to their own "circadian clock". Those who chose this answer rated their engagement higher. However, remaining activities maintaining engagement during online learning were not statistically related to their rate of the commitment of engagement level.

Table 6
Analysis of the relation between actions supporting involvement in the course of learning in the form of e-learning and the degree of engagement in the e-learning courses

		Degree of engagement in the e-learning courses					Strong engagement
		No engagement	2	3	4		
Which activities maintain your engagement during online learning?	doing exercises, filling out worksheets	N	4	8	55	106	36
		%	50,0%	61,5%	71,4%	79,7%	67,9%
	observing other students, their ideas, creations and ways of thinking	N	2	5	29	70	18
		%	25,0%	38,5%	37,7%	52,6%	34,0%
	creating mind maps and diagrams to identify the relations between key terms	N	1	3	19	26	9
		%	12,5%	23,1%	24,7%	19,5%	17,0%

Table 6
Analysis of the relation between actions supporting involvement cd.

		Degree of engagement in the e-learning courses				
		No engage- ment	2	3	4	Strong engage- ment
Which activities maintain your engagement during online learning?	deadlines set by the teacher	N 5	5	41	78	31
		% 62,5%	38,5%	53,2%	58,6%	58,5%
	giving examples referring to real life situations	N 1	2	21	40	21
		% 12,5%	15,4%	27,3%	30,1%	39,6%
	possibility of choice when it comes to the level of dif- ficulty of tasks	N 3	2	17	29	10
		% 37,5%	15,4%	22,1%	21,8%	18,9%
	practical use of the informa- tion learned	N 0	7	26	52	24
		% 0,0%	53,8%	33,8%	39,1%	45,3%
	cooperation with other participants	N 1	4	38	63	21
		% 12,5%	30,8%	49,4%	47,4%	39,6%
	self-assessment	N 2	5	25	60	23
		% 25,0%	38,5%	32,5%	45,1%	43,4%
	participation in group as- signments	N 0	0	10	18	8
		% 0,0%	0,0%	13,0%	13,5%	15,1%
possibility to learn accord- ing to own “circadian clock”	N 2	3	27	76	22	
	% 25,0%	23,1%	35,1%	57,1%	41,5%	
possibility to choose co-participants in group assignments	N 0	1	17	31	11	
	% 0,0%	7,7%	22,1%	23,3%	20,8%	
deciding or co-deciding upon the course of educa- tion process	N 0	1	9	25	10	
	% 0,0%	7,7%	11,7%	18,8%	18,9%	
Generally	N 8	13	77	133	53	

Source: own research.

Table 7
Chi-square independence test statistic along with the significance of relation between the answer to the question “Which activities maintain your engagement during online learning?” and the degree of engagement in the e-learning courses

		Degree of engagement in the e-learning courses
doing exercises, filling out worksheets	Chi-square	6,757
	df	4
	Significance	0,149
observing other students, their ideas, creations and ways of thinking	Chi-square	8,764
	df	4
	Significance	0,067
creating mind maps and diagrams to identify the relations between key terms	Chi-square	1,617
	df	4
	Significance	0,806
deadlines set by the teacher	Chi-square	2,246
	df	4
	Significance	0,691
giving examples referring to real life situations	Chi-square	5,522
	df	4
	Significance	0,238
possibility of choice when it comes to the level of difficulty of tasks	Chi-square	1,269
	df	4
	Significance	0,867
practical use of the information learned	Chi-square	9,019
	df	4
	Significance	0,061
cooperation with other participants	Chi-square	5,800
	df	4
	Significance	0,215

Table 7
Analysis of the relation between actions supporting involvement cd.

		Degree of engagement in the e-learning courses
self-assessment	Chi-square	4,777
	df	4
	Significance	0,311
participation in group assignments	Chi-square	3,494
	df	4
	Significance	0,479
possibility to learn according to own “circadian clock”	Chi-square	14,876
	df	4
	Significance	0,005
possibility to choose co-participants in group assignments	Chi-square	3,987
	df	4
	Significance	0,408
deciding or co-deciding upon the course of education process	Chi-square	4,590
	df	4
	Significance	0,332

Source: own research.

Free access to the course at any place and at any time, greater emphasis on individualization of learning allows students to learn in line with their own activities, time and rhythm.

4.12. Relation between types of teaching measures contributing to rousing the feeling of being in an online community of learners and the degree of engagement in the e-learning courses

In the last step of the research, another chi-squared independence test was performed. It verified whether any statistically significant relation occurs between students' answer to the question “Which didactic endeavours gave you the sense of belonging to the online learning commu-

nity?” and the level of engagement in the e-learning courses. As indicated by the values seen in table 8, statistically significant relations occur between the level of students’ engagement and didactic endeavours such as providing support and help to other participants, sharing own knowledge and experience, being informed about own improvements and active participation and engagement on the part of the teacher as a member of the community. Again, the percentage distributions indicate that students who marked the abovementioned answers rated their engagement higher. The rest of the didactic endeavours designed to give the students sense of belonging to online community of learners were not statistically related to their degree of engagement.

Table 8
*Analysis of the relation between student’s answer to question
 “Which didactic endeavours gave you the sense of belonging
 to the online community of learners?” and the degree of engagement
 in the e-learning courses*

		Degree of engagement in the e-learning courses				
		No engage- ment	2	3	4	Strong engage- ment
Which didactic endeavours gave you the sense of belonging to the online community of learners?	possibility to work in groups	N 4	7	48	78	27
		% 57,1%	53,8%	66,7%	62,4%	57,4%
	possibility to observe and reflect upon others	N 3	3	34	73	26
		% 42,9%	23,1%	47,2%	58,4%	55,3%
	frequent contact with other participants	N 5	4	43	75	28
		% 71,4%	30,8%	59,7%	60,0%	59,6%
	possibility to hear opinions of the others	N 6	9	50	83	29
		% 85,7%	69,2%	69,4%	66,4%	61,7%
	possibility to meet other participants	N 2	1	21	38	13
		% 28,6%	7,7%	29,2%	30,4%	27,7%
	possibility of providing support and help to other participants	N 2	1	38	62	28
		% 28,6%	7,7%	52,8%	49,6%	59,6%

Table 8
Analysis of the relation between student's answer to question cd.

		Degree of engagement in the e-learning courses				
		No engage- ment	2	3	4	Strong engage- ment
Which didactic endeavours gave you the sense of belonging to the online community of learners?	possibility of sharing own knowledge and experience	N 1	4	41	79	32
		% 14,3%	30,8%	56,9%	63,2%	68,1%
	being informed about own improvements	N 2	0	14	41	19
		% 28,6%	0,0%	19,4%	32,8%	40,4%
	engagement of all par- ticipants to the benefit if the whole community of learners	N 2	3	23	55	13
		% 28,6%	23,1%	31,9%	44,0%	27,7%
	sympathising with others	N 0	3	26	53	18
		% 0,0%	23,1%	36,1%	42,4%	38,3%
	learning from others	N 1	4	38	72	24
		% 14,3%	30,8%	52,8%	57,6%	51,1%
active participation and engagement on the part of the teacher as a member of the community	N 0	2	14	44	11	
	% 0,0%	15,4%	19,4%	35,2%	23,4%	
Generally	N 7	13	72	125	47	

Source: own research.

Thus, it can be concluded that the actions of a “social activity” (support, help, sharing, information about the progress, part teacher) play a key role. Learners express their commitment to the other participants of the courses.

4. Conclusions

Conducted analysis of the empirical material and its description lead us to the following conclusions:

- along with the number of online courses taken by the students, grows the level of their engagement in these courses. Therefore, students with experience in e-learning courses are well aware of the need for the greater commitment in order to achieve a high learning performance;
- the higher the degree of students' engagement in the courses was, the more they were motivated by the educational materials and teacher's activities. The integral components of successful on-line course are well designed educational materials and the presence of the person conducting course;
- stronger engagement of the learners was motivated by interactive exercises with self-assessment, graded exercises and interactive presentations. Learning which requires thought, need to select and action is significant for learner's engagement. The results of the research are pointing at the value of interactive educational materials which were valued the most and aroused the commitment of students;
- the more motivating the teacher's support was, the more engaged in the courses students were. Thus the involvement of the students is developed through the teacher's support;
- motivation in the form of rewards is significant for the learners' engagement in classes;
- stronger engagement is connected with having the possibility to learn accordingly to the learners' „circadian clock”. One of the characteristic features of e-learning course is asynchronous, which provides greater flexibility in learning planning, which allows students to adapt it to their daily schedule.
- degree of engagement is related to didactic endeavours, such as providing support and help to other participants, sharing own knowledge and experience, being informed about own improvements and active participation and engagement on the part

of the teacher as a member of the community. Learning that requires a mutual interaction, a cooperation and an exchange of ideas, promotes a deeper level of thinking and contributes to engaging young adults to learn on-line and to create an active community of learners.

Online learners should be granted the freedom of choice. It is important to provide clear learning criteria and set the expectations. Academic teachers face the challenge of being successful designers and observers to recognize students who lose interest in learning and to promote friendly learning atmosphere far from the isolation of a private computer, but in a community.

Today, young people often lack engagement and passion of learning, which arises problems. Online students face even more issues due to physical absence of the teacher and concentration problems, which might result in lack of progress and eventually in resigning from taking the online course. Therefore teachers and online courses' designers should seek different ways of inspiring engagement and passion among online students. As Jarosław Płuciennik rightly said:

Today it's not about making every student a potential future scientist, but about motivating them to learn sensibly, which will result in an educational change that will finally bring profits to the learners themselves²³.

Teachers can improve students' engagement using following methods:

- 1) activating methods, positively influencing learners' engagement;
- 2) designing interesting, carefully thought out problem- and situation-focused assignments and interactive educational materials;
- 3) developing time-managing and concentration-maintaining skills in online learners who face many distractions (home, family members, housework, resources and services offered by the Internet etc.);

²³ J. Płuciennik, *Zaangażowanie studenta, uniwersytet i jego transformacje*, in: *Twórczość, pasja, uniwersytet. Kategoria zaangażowania w dydaktyce akademickiej*, eds. J. Płuciennika, K. Klimczak, WUŁ, Łódź 2015, p. 10, <http://hdl.handle.net/11089/16687> [access: 10.06.2016].

- 4) controlling learners' improvements and supporting their doings;
- 5) giving clear and constructive opinions and grades;
- 6) rewarding learners for gaining particular knowledge and skills;
- 7) giving learners opportunity to learn according to their own "circadian clock".

The results of my own research confirm that the involvement is an important factor to be taken into account when designing the on-line course and also during the implementation of on-line lessons. It is worthwhile considering the principle of the individualisation and the collectivity which refers to adapting the organization and the course of the process of educating to the individual needs of learners, as well as to creating a cooperating community of learners in the virtual class. Conducted analyses proved that the participation in a number of courses, interactive materials, tasks to evaluation, teacher's support, rewarding, personal rhythm of learning, sharing the knowledge and informing students about their learning progress is contributing to the increase of the students' engagement. This may ultimately transfer into better learning outcomes. Teachers should be familiar with the current literature in this field, including effective strategies of engaging students. This will allow them to design good-quality e-learning courses and to achieve a successful implementation of the courses.

Summary

ENGAGED ACADEMIC E-LEARNING – RESEARCH REPORT

The author of this text raises an important issue of student engagement shown by e-learning users. In this report, she presents the results of her own empirical research, the aim of which was to identify the conditionings of their engagement in online learning. The research was conducted on a community sample consisting of 310 students of different majors at Nicolaus Copernicus University in Toruń (English Philology, Polish Philology, German Philology, History, Mathematics, Finance and Accounting, Pedagogy, Management, Economics, Law). The research has shown that higher degree of students' en-

gement in classes and their motivation driven by educational materials and teacher's activities go hand in hand. Interactive exercises, self-assessment, graded activities and presentations proved to contribute to higher engagement on the students' part. The more motivating teacher's support was, the more engaged the students were. Rewarding the students turned out to be the most successful type of motivation.

Key words: engagement, activity, e-learning, active learning, methods, higher education

