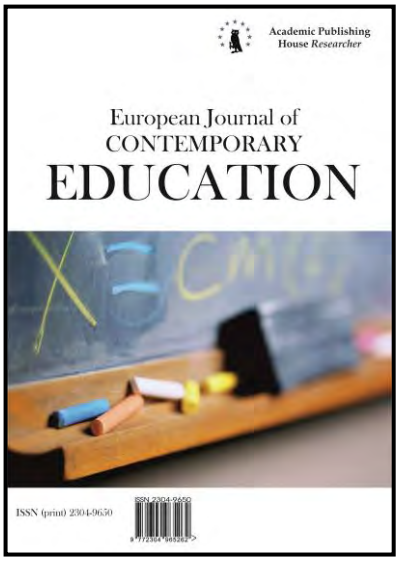
Published in the Slovak Republic
European Journal of Contemporary Education
E-ISSN 2305-6746
2020, 9(3): 584-591
DOI: 10.13187/ejced.2020.3.584
www.ejournal1.com



Academic Motivation Among Traditional and Online University Students

Romualdas K. Malinauskas [a, *], Jurate Pozeriene [a]

[a] Lithuanian Sports University, Lithuania

Abstract

In this paper, the differences in academic motivation between university students of traditional (in-classroom) and online (distance) education were investigated. It has been hypothesized that online (distance) students possess stronger intrinsic motivation than traditional (in-classroom) students. The random sample consisted of 386 students. Participants comprised 189 male and 197 female students; 194 of them were traditional students, and 192 of them were online students. The cross-sectional research design was used in this study. A 21 item Academic Motivation Scale (SAMS-21) was used to measure three types of extrinsic motivation (intrinsic motivation to know, to accomplish things, and to experience stimulation), three types of extrinsic motivation (external, introjected, and identified regulation) and amotivation in university students. The findings indicated that students' intrinsic motivation scores were higher in online students than in students who attend traditional face-to-face classes. The results did not reveal significant differences between male and female students in terms of academic motivation. This study made a novel contribution to the literature, because the present study has compared academic motivation between university students of traditional and online education in a new context. i.e. before COVID-19 pandemic and during it. Recommendations are provided for further research into areas not covered by this study.

Keywords: academic motivation, online learning, traditional learning, university students.

1. Introduction

Researchers' attention to studies of academic motivation has not decreased in the last ten years. It is important to investigate academic motivation due to its significant influence on learning at university. Now, due to the COVID-19 pandemic researchers paid more attention to investigation of online (distance) education and to academic motivation among university students situated within online learning environments. The present study examines the differences in academic

* Corresponding author
E-mail addresses: Romualdas.Malinauskas@lsu.lt (R.K. Malinauskas)

motivation between university students of traditional (in-classroom) and online (distance) education.

There is no single, agreed definition of distance and online education due to the variance of what it includes at different universities. The term "distance education" is used to describe the teaching process when the instructor is remote (geographically separated) from the student (Gallagher, McCormick, 1999). Online learning is viewed here as a category of distance education (students can communicate at the same time with either the entire class, or the instructor only) that specifically uses the Internet when the students watch online lectures and interact with the educators and other students in online forums (Bates, 2005). In other words, online learning is a learning environment in which students are able to 0 in classes via Internet and/or computer technology (Hartnett et al., 2011). It is one popular method being used by universities in various countries to meet the needs of social distancing during the COVID-19 pandemic.

Many benefits of online education could be mentioned from the scientific literature. Online education is useful in eliminating the time and expense associated with student travel, uniformity of content, students can work on the class according to their own schedules (Hollis, Madill, 2006; Genc et al., 2016). Online students are more inclined to self-learning style, manifest themselves more independently and possess an internal locus of control, although findings regarding persistence in the distance classroom have been inconclusive (Gibson, 2003). The specificity of online learning is associated with a change in the characteristics of the social presence of the teacher and student in a learning situation (Richardson et al., 2017). It can be noted that character of student motivation in many ways determines the preference for students of the format of interaction with lecturer (direct or mediated via internet) and therefore allows more or less accurately predict the effectiveness of online education (Bassili, 2008; Markova et al., 2017). Research shows that students involved in online learning, often face the lack of possibility to interact individually with the teacher in real time and to receive timely feedback, tackle the lack of external control (Markova et al., 2017). Sometimes university students have a sense of isolation, which reduces satisfaction with teaching in groups of online education students (Richardson et al., 2017).

Previous research has shown that the motivation of students in the conditions of online learning differs depending on the education stage (Kim, Frick, 2011). At the beginning of online course, assuming self-development teaching materials, motivation of students is positively related to their technological competence and the extent to which they consider the course to be relevant to themselves (Kim, Frick, 2011). By the middle of the course, motivation is determined by understanding the meaning of the studied material for one's own education (Kim, Frick, 2011).

The present study is based on the Self-Determination Theory (Deci, Ryan, 1985), which has been used extensively to explore the structure of individual students' academic motivation and which highlights that all humans have an intrinsic need to be self-determining or autonomous (i.e., experience a sense of self-efficacy and control), as well as to feel competent (i.e., capable) and connected (i.e., included and linked to others) in relation to their environment (Ryan, Deci, 2000). Self-Determination Theory states that if environmental conditions support an individual's autonomy then more autonomous forms of motivation will be promoted (Ryan, Deci, 2000).

Satisfaction with personal competence or effectiveness can be a motivation to learn. Perceived competence can play an important role in shaping motivated behaviour and can be a major cause of motivated behaviour (Ryan, Deci, 2017). However, this is clearly not the case for all activities. Motivated behaviour is not limited to competence expectations – the individual needs additional rewards and satisfaction for motivated behaviour to be performed and maintained (Elliot et al., 2017). Thus, while competency-oriented theorists unequivocally argue that people tend to engage in actions in which they feel competent and avoid activities in which they lack competence, this does not adequately explain an individual's motivated behaviour. There are many examples of behaviour where a person is highly competent but has no personal interest or value in the activity performed. The element of behaviour – why a person chooses to do what he or she does – cannot be explained by focusing solely on competence. People by nature want to be independent – to interact voluntarily with the environment (the ability to choose so as to meet their needs) and to engage in activities that they find enjoyable (Ryan, Deci, 2017). Most creative, healthiest, and most productive achievements are achieved when we are motivated by an inner interest in the task (Ryan, Deci, 2017).

The Self-Determination Theory is unique because it distinguishes different types and subtypes of motivation and self-regulation. The value of these differences is supported by careful research based on the Self-Determination Theory, showing that different types of motives differently predict success, perseverance, and emotions in different achievements and competencies (Elliot et al., 2017).

Intrinsic motivation promotes activities in which the individual experiences inherent satisfaction; he or she finds this activity interesting and enjoyable (Ryan, Deci, 2017). In this sense, "rewards" are characteristic of activities, which activate areas of brain reward (Lee et al., 2012). Intrinsically motivated students do not need outside incentives. From a functional point of view, what activates intrinsically motivated students is pleasure, especially in terms of competence and autonomy (Lee et al., 2012). The factors, which hinder the realization of the needs of competence and autonomy, hinder intrinsic motivation (Lee et al., 2012). Thus, intrinsic motivation arises from self-awareness and from the pleasure which is felt during a particular activity (Morillo et al., 2018).

The concept of extrinsic motivation is the opposite of intrinsic motivation. It is related to instrumental motivation – it is the motivation related to external incentives and rewards to engage in activities. Extrinsic motivation is understood as a kind of potential reward (Morillo et al., 2018). "Students who are extrinsically motivated undertake activities for reasons separate from the activity itself (Ryan, Deci, 2000), for example gaining good grades, avoiding negative consequences, or because the task has utility value, such as passing a course in order to earn a degree" (Hartnett et al., 2011: 23).

According to Ryan and Deci (2017), if a teacher gives a reward to a student and the controlling aspect of the reward is considered dominant, then intrinsic motivation decreases, since the student will perceive the teacher to be externally manipulating his or her performance (Wighting et al., 2018). The degree to which an activity is perceived as externally controlled can vary, and therefore different types of extrinsic motivation exist. "This model conceptualises a continuum of regulation that ranges from amotivation (lack of motivation) at one end to intrinsic motivation at the other" (Hartnett et al., 2011: 23). The balance between extrinsic motivation and self-determined types of motivation becomes crucial in the context of online education (Hartnett et al., 2011).

The following research questions guided this study which is based on the Self-Determination Theory: 1) Does academic motivation differ in students of traditional and online education? 2) Are there gender differences in academic motivation levels in students of traditional and online education?

Study hypothesis – we hypothesize that online (distance) students possess stronger intrinsic motivation than traditional (in-classroom) students. Our hypothesis is based on students' studies (Rovai et al., 2007), which indicated that controlling environments (traditional, in-classroom) reduce a student's sense of autonomy and decrease intrinsic motivation.

The aim of the study was to determine the differences in academic motivation between university students of traditional (in-classroom) and online (distance) education.

The significance of research. This study makes a novel contribution to the literature, because the present study has compared academic motivation between university students of traditional and online education in a new context. i.e. before COVID-19 pandemic and during it. We also evaluated multiple aspects of academic motivation (three types of intrinsic motivation (intrinsic motivation to know, to accomplish things, and to experience stimulation), three types of extrinsic motivation (external, introjected, and identified regulation) and amotivation) in order to provide a comprehensive assessment of this phenomenon. We analysed academic motivation with respect to gender in the present study, because gender is among the important considerations in motivational functioning of students (Cerezo Rusillo, Casanova Arias, 2004).

2. Methods

Sample and Procedure. The random serial sampling method was used for this investigation. Study participants were recruited from a list of fifteen universities. The concerned universities were selected using simple random sampling as they were assessed in terms of the comparability of university size and their quality of students. The sample size recruited for the study before COVID-19 pandemic from the two universities was 194 traditional students and the sample size recruited for the study after COVID-19 pandemic from the two universities was 192 online students (online

classes have been organized using Zoom and MS Teams platforms). Study participants participated in the survey using a paper-pencil test before COVID-19 pandemic and by online survey during COVID-19 pandemic. Participants were informed that they may ask any questions or raise any concerns about the study. The total sample thus consisted of 386 students whose mean age at the start of the study was 19.21 years (SD = 0.83). There were no differences in age between traditional and online university students (t(384) = 1.17, n.s.). There were also no differences in age between male and female students (t(384) = 1.26, n.s.).

The study was approved by the Committee for Social Sciences Research Ethics of Lithuanian Sport University. The research was conducted in accordance with ethical guidelines and the legal code of the country in which the study was conducted. The questionnaire contained the instruments listed below.

Instruments. The Academic Motivation Scale (SAMS-21) by Kairys et al. (2017) was developed on the basis of the provisions of self-determination theory (Vallerand et al., 2008). This scale measures the seven subscales of motivation towards university studies. It contains 21 items assessed on a 7-point Likert type scale ranging from 1 (strongly disagree) to 5 (strongly agree). The SAMS-21 is subdivided into seven subscales which measures three types of intrinsic motivation (intrinsic motivation to know, to accomplish things, and to experience stimulation), three types of extrinsic motivation (external, introjected, and identified regulation) and amotivation. "Intrinsic motivation refers to doing something because it is inherently interesting or enjoyable, and extrinsic motivation refers to doing something because it leads to a separable outcome" (Ryan, Deci, 2000: 55). Extrinsic motivation refers to behaviour that is driven by external rewards such as money, fame, grades, and praise. External regulation is the type of extrinsic motivation, where individuals are responsive to threats of punishment or the offer of rewards and tend to be compliant as a result (Hartnett et al., 2011). It is the least autonomous type of external motivation.

Introjection refers to students who engage in a task because they act out of duty, to avoid feelings such as guilt and shame. Identified regulation is associated with individuals who engage in an activity because the results may have personal value to them or because the activity is regarded as worthwhile (Hartnett et al., 2011). According to Ryan and Deci (2000), amotivation is the state of lacking an intention to act. A high score for the subscale indicates strong type of motivation. The SAMS-21 shows good internal consistency. The value of the Cronbach's alpha coefficient for the present sample ranged from 0.63 to 0.87.

Statistical Analysis. Research data were statistically processed using SPSS 24.0 (Statistical Package for Social Sciences). Descriptive statistics, namely means, standard deviations, were calculated. Skewness (the symmetry of a distribution) and kurtosis (the homogeneity of a distribution) coefficients were calculated to assess univariate normality because Student t test requires normally distributed data. Skewness and kurtosis coefficients between +1 and -1 indicated that data were normally distributed. We calculated the reliability of each dimension given by the index of Cronbach's alpha internal consistence. Data analysis used the Student t test for independent samples, comparing traditional and online university students. Effect sizes were expressed as Cohen's d. Cohen's d effect sizes are generally defined as small (d = .2), medium (d = .5), and large (d = .8).

3. Results

Chi-square contingency table analysis revealed no differences in the demographic characteristics of the traditional and online university students based on gender, χ^2 (2, N = 386) = .16, p > .05. In order to compare the types of academic motivation among traditional and online university students, the types' scores differences were determined using Student's *t*-test (Table 1).

Table 1. The statistical indicators of academic motivation among traditional and online university students ($M \pm SD$)

Types of motivation	Traditional students (n = 194)	Online students (n = 192)	t-test score	Cohen's d
Intrinsic – To know	19.02 ± 4.31	19.93 ± 4.27	-2.08*	.21
Intrinsic – To accomplish things	18.03 ± 4.43	18.98 ± 5.01	-1.97*	.20
Intrinsic – To experience stimulation	17.27 ± 4.59	18.19 ± 4.56	-1.98*	.20
Extrinsic – Identified regulation	19.23 ± 5.22	19.77 ± 5.68	-.97	.10
Extrinsic – Introjected regulation	17.96 ± 4.63	18.09 ± 4.97	-.26	.03
Extrinsic – External regulation	17.38 ± 4.74	17.61 ± 4.54	-.49	05
Amotivation	07.11 ± 2.47	06.92 ± 2.61	.73	.07

Notes: ($M \pm SD$) – mean and standard deviation; Cohen's d – effect size; * – $p < .05$.

It was found that online students' intrinsic motivation indicators levels were higher than those of traditional students. Statistical analyses revealed that online students reported greater scores in Intrinsic motivation – To know (t (384) = -2.08; $p < .05$), Intrinsic motivation – To accomplish things (t (384) = -1.97; $p < .05$), Intrinsic motivation – To experience stimulation (t (392) = -1.98; $p < .05$).

The results of the independent samples t-tests also were used to determine the differences between male and female university students. These results are summarised in Table 2. The independent samples t-test showed that there are no significant differences between male and female university students in all types of academic motivation.

Table 2. The statistical indicators of academic motivation male and female university students ($M \pm SD$)

Types of motivation	Male students (n = 189)	Female students (n = 197)	t-test score	Cohen's d
Intrinsic – To know	19.11 ± 4.29	19.53 ± 4.33	-.96	.10
Intrinsic – To accomplish things	18.34 ± 4.75	18.98 ± 5.06	-1.28	.13
Intrinsic – To experience stimulation	17.81 ± 4.62	18.14 ± 4.54	-.71	.07
Extrinsic – Identified regulation	19.21 ± 5.47	19.76 ± 5.63	-.97	.10
Extrinsic – Introjected regulation	17.94 ± 4.68	18.12 ± 4.95	-.37	.04

Extrinsic – External regulation	17.36 ± 4.72	17.63 ± 4.58	-.57	.06
Amotivation	07.09 ± 2.53	06.91 ± 2.64	.68	.07

Notes: ($M \pm SD$) – mean and standard deviation; Cohen's d – effect size; * – $p < .05$.

4. Discussion

The purpose of the present study was to investigate differences in academic motivation between university students of traditional and online education. This study revealed differences in intrinsic motivation between traditional and online university students. Our hypothesis that online students possess stronger intrinsic motivation than traditional students was confirmed. The current study has shown that online students' intrinsic motivation indicators levels were higher than those of traditional students (effect size was week, Cohen's d ranged from .20 to .21) – is in agreement with the data obtained by Rovai et al. (2007) that online students possess stronger intrinsic motivation than traditional students who attend face-to-face classes on three intrinsic motivation measures: to know, to accomplish things, and to experience stimulation (effect size was also week and varies from η_p^2 =.02 to η_p^2 = .04). Additionally, Fırat et al. (2018) supports that level of intrinsic motivation of distance education students is higher in e-learning environments.

The present research data may be explained by the Self-Determination Theory (Deci, Ryan, 1985), which emphasises that students whose behaviour is mostly internally regulated (or autonomous) have more interest, confidence, excitement, persistence, better performance, and show a better conceptual understanding of the material than students who are mostly externally controlled (Deci, Ryan, 2000). The current study findings suggest that course type could influence students' internally regulated (or autonomous) behaviour.

The results of our study reflect previous research, which has indicated that Self-Determination Theory has the potential to address learning problems such as student attrition in the online learning environment (Chen, Jang, 2010). In addition, study by Chen and Jang (Chen, Jang, 2010: 750) supported the Self-Determination Theory's main theorizing "that human motivation is a complicated, multidimensional inner process, as opposed to a singular, monolithic construct". In online education, students have different reasons to participate in class. "They may embrace internal reasons such as interest, joy, or the pursuit of self-fulfilment" (Chen, Jang, 2010: 750).

Continuing the discussion, we identified whether students' gender has a difference on academic motivation. Analyses indicated that there are no significant differences between male and female university students in all types of academic motivation. This finding was similar to the findings of Ramos and Habig (2019) whose showed that gender has no significant effect on academic motivation.

The results of the present study are also consistent with a study by Cerezo Rusillo and Casanova Arias (2004), showing that gender differences were not found in intrinsic motivation. This finding was not consistent with the findings of Bugler et al. (2013) in which girls were found to have significantly higher academic motivation than boys. In conclusion, our findings could be explained by the fact that Bugler et al. (2013) investigated academic motivation only in traditional (in-classroom) educational environment.

Limitations and future prospects. Our results were limited to university students. This analysis did not cover students of other educational institutions, and as a result, the conclusions cover only academic motivation of this particular group of students. The present study is a cross-sectional rather than experimental study, and the correlational nature of the study design makes it difficult to draw cause-and-effect conclusions, i.e., that course type (traditional and online) cause academic motivation. Longitudinal study design might be used in the future to examine academic motivation among traditional and online university students and to explore how indicators of academic motivation occur over time.

5. Conclusion

The study results revealed that students' intrinsic motivation scores were higher in online students than in students who attend traditional face-to-face classes. The results did not reveal significant differences between male and female students in terms of academic motivation.

References

Bassili, 2008 – *Bassili, J.N.* (2008). Motivation and Cognitive Strategies in the Choice to Attend Lectures or Watch Them Online. *Journal of Distance Education*. 22(3): 129-148.

Bates, 2005 – *Bates, A.W.* (2005). Technology, e-learning and distance education (2nd ed.). New York: Routledge Falmer.

Bugler et al., 2015 – *Bugler, M., McGeown, S. P., St Clair-Thompson, H. (*2015). Gender differences in adolescents' academic motivation and classroom behaviour. *Educational Psychology*. 35(5): 541-556.

Cerezo Rusillo, Casanova Arias, 2004 – *Cerezo Rusillo, M.T., Casanova Arias, P.F.* (2004). Gender differences in academic motivation of secondary school students. *Electronic Journal of Research in Educational Psychology*. 2(1): 97-112.

Chen, Jang, 2010 – *Chen, K.C., Jang, S.J.* (2010). Motivation in online learning: Testing a model of self-determination theory. *Computers in Human Behavior*. 26(4): 741-752.

Deci, Ryan, 1985 – *Deci, E.L., Ryan, R.M.* (1985). Intrinsic motivation and self-determination in human behavior. New York: Plenum Press.

Elliot et al., 2017 – *Elliot, A.J., Dweck, C.S., Yeager, D.S.* (2017). Handbook of competence and motivation: theory and application (2nd ed.). New York: The Guildford Press.

Fırat et al., 2018 – *Fırat, M., Kılınç, H., Yüzer, T.V.* (2018). Level of intrinsic motivation of distance education students in e-learning environments. *Journal of Computer Assisted Learning*. 34(1): 63-70.

Gallagher, McCormick, 1999 – *Gallagher, P.A., McCormick, K.* (1999). Student satisfaction with two-way interactive distance learning for delivery of early childhood special education coursework. *Journal of Special Education Technology*. 14(1): 32-47.

Genc et al., 2016 – *Genc, G., Kulusakli, E., Aydin, S.* (2016). A Comparative Study on the Motivation and Attitudes of Language Learners of Online Distance and Traditional In-Classroom Education. *Turkish Online Journal of Distance Education*. 17(4): 63-75.

Gibson, 2003 – *Gibson, C.C.* (2003). Learners and learning: The need for theory. In M.G. Moore & W. G. Anderson (Eds.). Handbook of distance education (pp. 147-160). Mahwah, NJ: Lawrence Erlbaum.

Hartnett et al., 2011 – *Hartnett, M., St. George, A., Dron, J.* (2011). Examining motivation in online distance learning environments: Complex, multifaceted and situation-dependent. *The International Review of Research in Open and Distributed Learning*. 12(6): 20-38.

Hollis, Madill, 2006 – *Hollis, V., Madill, H.* (2006). Online learning: The potential for occupational therapy education. *Occupational Therapy International*. 13(2): 61-78.

Kim, Frick, 2011 – *Kim, K.J., Frick, T.W.* (2011). Changes in student motivation during online learning. *Journal of Educational Computing Research*. 44(1): 1-23.

Lee et al., 2012 – *Lee, W., Reeve, J., Xue, Y., Xiong, J.* (2012). Neural differences between intrinsic reasons for doing versus extrinsic reasons for doing: An fMRI study. *Neuroscience Research*. 73(1): 68-72.

Markova et al., 2017 – *Markova, T., Glazkova, I., Zaborova, E.* (2017). Quality issues of online distance learning. *Procedia-Social and Behavioral Sciences*. 237: 685-691.

Morillo et al., 2018 – *Morillo, J.P., Reigal, R.E., Hernandez-Mendo, A.* (2018). Motivational Orientations, Autonomy Support, and Psychological Needs in Beach Handball. *Revista Internacional de Medicina y Ciencias de la Actividad Física y el Deporte*. 18(69): 103-117.

Ramos, Habig, 2019 – *Ramos, D.P.R., Habig, E.G.* (2019). Measuring the academic motivation of selected first year nursing students: a preliminary study. *International Journal of Education and Research*. 7(8): 173-182.

Richardson et al., 2017 – *Richardson, J.C., Maeda, Y., Lv, J., Caskurlu, S.* (2017). Social presence in relation to students' satisfaction and learning in the online environment: A meta-analysis. *Computers in Human Behavior*. 71: 402-417.

Rovai et al., 2007 – *Rovai, A., Ponton, M., Wighting, M., Baker, J.* (2007). A comparative analysis of student motivation in traditional classroom and e-learning courses. *International Journal on E-learning*. 6(3): 413-432.

Ryan, Deci, 2000 – *Ryan, R.M., Deci, E.L.* (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*. 25(1): 54-67.

Ryan, Deci, 2017 – *Ryan, R.M., Deci, E.L.* (2017). Self-Determination Theory. Basic Psychological Needs in Motivation, Development, and Wellness. NewYork: The Guilford Press.

Vallerand et al., 2008 – *Vallerand, R.J., Pelletier, L.G., Koestner, R.* (2008). Reflections on self-determination theory. *Canadian Psychology*. 49(3): 257-262.

Wighting et al., 2008 – *Wighting, M.J., Liu, J., Rovai, A.P.* (2008). Distinguishing sense of community and motivation characteristics between online and traditional college students. *Quarterly Review of Distance Education*. 9(3): 285-296.