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Comparative Analysis on the Impact of Distance Learning Between Russian and Japanese University Students, During the Pandemic of COVID-19

Vovk Viktoria¹, Mammadova Aida²

¹ School of Human and Social Sciences of Regional Development Studies, Kanazawa University

² Organization of Global Affairs, Kanazawa University

Correspondence: Mammadova Aida. Email: mammadova@staff.kanazawa-u.ac.jp

Abstract

This article discusses the impact of the full transition to distance learning, during spread of coronavirus infection COVID-19. The advantages and disadvantages of distance learning under the conditions of self-isolation have been identified. A comparative analysis of two groups of students from Russia (18 students) and Japan (31 students) were analyzed based on survey data, which revealed qualitative differences in the psychological condition of students during the self-isolation, and after the transition to the full-time education system. Special attention was paid to such aspects as: the level of psychological (mental) condition, efficiency, productivity, and overall assessment of the form of education. We have found that after the transition to full distance learning, both groups of students observed a decrease in the positive average level of psychological (mental) state, indicating that the mental states were similar regardless of territorial belonging. However, after a partial return to the full-time education system, the average positive level of psychological (mental) state increased, which indicates the importance of full-time education as the only one that creates conditions for emotional, energetic and positive influence between communicators.

Keywords: Distance Learning, Students, University, Pandemic, COVID-19

Introduction

On February 1, 2020, with the spread of the Covid-19 pandemic around the world, the Ministry of Foreign Affairs of Japan began to impose entry restrictions to foreign citizens. From July 20 to July 26, 2020, the number of countries whose foreign nationals were unable to enter Japan were 146 countries (Ministry of Justice of Japan). Among those citizens of foreign countries, in addition to tourists were also citizens who were planning to visit Japan on a work, business and student visa.

Every year in spring and autumn, a large number of foreign students enter Japan. However, in the year 2020, the number of international students has decreased drastically. According to the Ministry of Education, Culture,

Sports, Science and Technology of Japan, students who entered Japan (for the first time) in the fall of 2018 were 35 thousand people, in the spring of 2019 there were 54 thousand people. In 2020, the number of international students who were able to enter the country before the beginning of April (that is, before the complete closure of borders with many countries) was limited, and most of the students could not come to Japan ("Asahi Shimbun"). What are the consequences for international students when they are unable to come to Japan? One of the most obvious consequences that foreign students faced while in their homeland is the transition of most educational institutions in Japan into the distance education.

Before the active spread of Covid-19, face-to-face training was the basis of the educational process. This is a classic type of education, which implies the real presence of students inside the educational institutions. However, with the impossibility to visit the country directly, there is a direct need to replace the dominant form of full-time education with distance learning (DL). According to a study by the survey research conducted by the Digital Knowledge stock company, (Digital Journal, 2020), which specializes in e-learning, in March 2020, the percentage of implementation of DL in Japanese universities throughout the country was approximately 4.2%, but literally a month later in April and May of the same year, this figure was already 93.7% (89.5% growth is seen).

What is DL and what is its concept? According to Andreev A.A. (Andreev, 1997) DL is a synthetic, integral humanistic form of education, based on the use of a wide range of traditional and new information technologies and their technical means, which are used to deliver educational material, its independent study, dialogue exchange between the teacher and the student, and the learning process is generally not critical to their location in space and time, as well as to a specific educational institution". In this case, telecommunications (Zoom, Moodle, Skype, QQ, etc.) are the so-called technological means that have become the leading ones in the distance practice of Japanese universities. Of course, in addition to this definition, there are many different definitions, as well as issues related to the relationship of DL to the educational types, technology, or teaching tools. But the fact that DL is a special synthetic environment that allows you to transfer the traditional process of learning alive on a virtual reality remains unchanged. In this article, we will consider the practical effects of DL, i.e. the impact of DL on the educational process in the conditions of Covid-19 distribution.

Until the pandemic the demand for DL was not well formed as it was new format of education, and the advantages and quality of which was difficult to assess due to lack of statistics P. L. Pecker (2015). However, in 2020 mankind faced such a problem as coronavirus pandemic, which was the main factor in the rapid transition to DL and it suddenly changed in to the only possible form of education and communication. As mentioned earlier, a technological tool that has become the leading distance practice for Japanese universities (82% of 728 Japanese universities have switched to online learning, according to a joint study by Asahi Shinbun and Kawaijuku from June 24 to July 26, 2020), is made by means of telecommunications, and the main factor behind this transition was the spread of coronavirus infection.

Sociologist F.W. Taylor (2001) has proposed a classification of DL according to five stages of development:

1. Classical part-time education;
2. The use of various one-way (no feedback) means of transmitting educational materials: printed information materials, live broadcast or recordings on media;
3. Two-way, synchronous distance learning using audio or video conferencing;
4. Asynchronous online learning combined with interactive multimedia;
5. Intelligent flexible teaching, which provides a high degree of automation and control, asynchronous online student learning and interactive multimedia

When discussing the situation of DL in Japan, we can conclude that there is a prevalence of second type of distance education (using one-way means of transmitting learning materials) and third type (two-way, synchronous DL using audio or video conferencing). The educational process using telecommunications, including the conduct of classes through the placement of classes previously filmed by the teaching staff to provide the necessary materials

that should replace full-time lessons, allows to ignore the spatial and temporal aspects, and in turn allows to rationalize the educational process.

O.B. Episheva (2010) identifies two main elements of DL: the physical separation of teachers and some of the students (that is, it indicates heterogeneity and at the same time accessibility in terms of time and space); the use of educational multimedia and electronic resources, both remote and in close proximity (here we can highlight the expansion of the quantitative component of educational materials). In addition to the above elements, it is important to add an increase in the availability of teaching materials for international students who have been planning to study in Japan. Before the pandemic, it was difficult to obtain online materials in Japan due to the various restrictions on online resources. After the rapid development of DL, it became possible to download educational materials, as well as get them online from a teacher in person.

Having combined the elements and selected characteristics, we will try to indicate the main qualities of DL:

1. Spatial accessibility;
2. Temporary availability;
3. Availability of a wider range of training materials;
4. Increasing accessibility to teaching materials through the virtual space

However, in addition to the above mentioned qualities of DL, we should also keep in mind the psychological aspect of DL. The DL model provides the information transfer in a special and educational environment (virtual), and it is known that the specificity of the environment radically affects all components of learning activity: learning motivation, learning situation, monitoring and assessment of student learning (Marchuk, 2013). Here we try to highlight the positive and negative aspects of DL, which was implemented in Japanese universities in 2020 from the point of view of the psychological effect on the personality of students. Positive aspects include, (1) Virtualization of reality by imitating what is happening in social reality, allows to practice skills, gain knowledge and experiences with minimal risk (Ibid, 2013), which can be associated with both a psychological factor and real movement in space; (2) reducing psychological stress and increasing activity during Internet communication due to the virtualization of space; (3) reducing the fear associated with "inability to study abroad", which can be characterized as psychological "border closure"; (4) the ability to actively participate in communication not only as a recipient, but also as a communicator (* only with third type of two-way DL described above). The negative psychological aspects of DL during the educational process during pandemic in Japan include: (1) lack of direct emotional, energetic, suggestive contact between students and the teacher, which complicates the process of transferring sociocultural experience, reduces the charismatic capabilities of educational subjects, negatively influence on personal and group identification of students, educational motivation (Ibid, 2013); 2) the mechanistic nature of the learning process (here we can distinguish both the impossibility of applying "real" pedagogical practices used in the third type of DL, for example, discussion, and neutralization by the virtual world of suggestive impact on students). Absence of direct contact during DL sharpens the importance of taking into account the psychological characteristics of the information flow, which largely determine the effectiveness of learning (Khutorskaya, 2001). In addition to the complexity of the information to maximize the meaningful field of students due to the virtualization, the Covid-19 environment adds stress which can be triggered by the inability to fulfil one's actual needs (like studying in Japan).

Methods

For more detailed analysis of the above aspects and the characteristics of their manifestation, we are considering the data of the survey conducted from September 9, 2020 to September 14, 2020 through the Google form, between Japanese and Russian students who were planning to visit both countries as exchange students, but due to the pandemic all courses were changed into DL. The topic of the questionnaire was "The impact of the spread of coronavirus on the educational process." A total of 49 students took part in the survey, of which 18 students were from the Russian Federation and 31 students from Japan. We created 1 questionnaire in Russian and Japanese languages with 12 questions. The scale from 1 to 5 were provided, with 1 as very bad, 2 as bad, 3 as satisfactory, 4 as good and 5 as excellent.

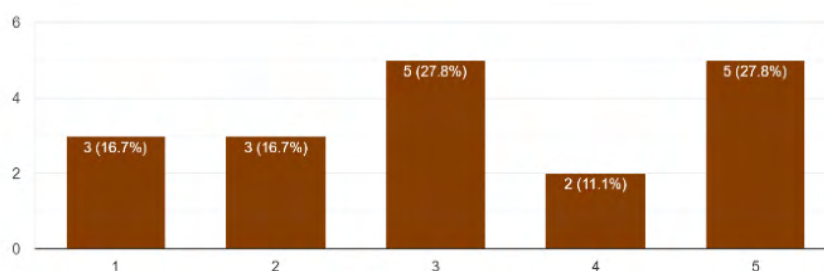
The questions proposed for students were as follows:

1. On a scale from 1 to 5, evaluate your mental state during self-isolation (when lessons were conducted online);
2. On a scale of 1 to 5, rate your mental state after a period of self-isolation (after returning to full-time classes);
3. On a scale from 1 to 5, rate your performance while learning online;
4. On a scale from 1 to 5, rate your performance after the restrictions were lifted and you returned to face-to-face studies;
5. On a scale from 1 to 5, rate your productivity of the educational process during online classes;
6. On a scale from 1 to 5, rate your educational performance after returning to your regular activities;
7. Explain, after returning to normal activities, what factors influenced such changes in your productivity (reasons);
8. On a scale from 1 to 5, rate your motivation (desire) for the educational process, or learning a new hobby;
9. Indicate the subject of your educational motivation during self-isolation (new field of science, new education, hobbies, music, etc.);
10. On a scale of 1 to 5, rate online communication;
11. On a scale of 1 to 5, rate live communication versus online communication;
12. What is preferable for you online classes or face-to-face classes;

In addition to the above questions, separate columns were provided for a more detailed explanation of the reasons for the respondents' answer, which gave us a general picture of the overall personal assessment and definitions made by students about: a) psychological state; b) working capacity; c) the productivity of the educational process; d) factors of productivity changes; e) motivation for the educational process (during self-isolation and after the removal of restrictions); f) comparative assessment of online communication and live communication; and g) positive and negative aspects of online meetings with international students.

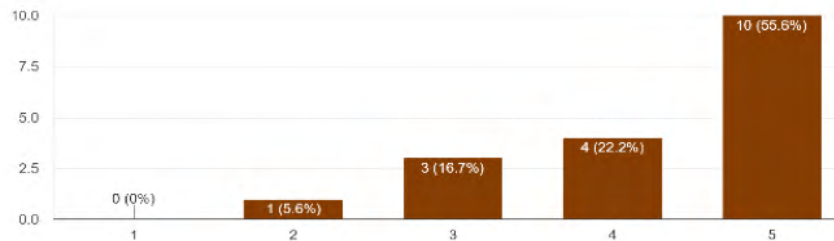
Results and Discussions

Among 18 Russian students, 28% (scale 3) assessed their psychological state during self-isolation as satisfactory; 39% (scale 4-5) - good, positive; 33% (scale 1-2) - negative, bad (Graph 1). In general, during the period of self-isolation, the psychological state of Russian students can be characterized as medium- positive (67%). Among the reasons for the low (negative) it can be noted the students' comments: *"There is no productivity and concentration"*, *"I wanted live communication, I was too lazy to study at home"*, *"Too many tasks, leaving no free time, constant being at the computer screen"*, *"Lack of live communication"*, *"Impossibility to see friends live."* The main factors of the low mood in 28% of students are the lack of "live communication" with both friends and teachers. In other words, as mentioned earlier, there is a clear negative effect from the absence of emotional and suggestive influences arising from direct contact. We would also emphasize the comment *"Too many tasks, leaving no free time, constant being at the computer screen"*. Here, the factor for the negative indicator of the student is the "erasure" of the line between personal and work spaces, which can both increase the influence of the work mood, which in turn will lead to an increase in psychological stress, and reduce the concentration of the student, which can directly affect the student's academic performance.



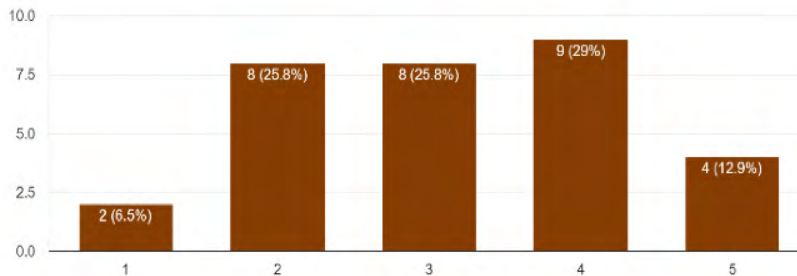
Graph 1. Psychological condition during online learning of Russian students

Next is the psychological state of Russian students after the restrictions were lifted and they returned to the full-time education system: 78% replied - good, positive (scale 4-5); 17% (scale 3) - satisfactory; 6% as bad (scale 1-2) (Graph 2). The general average positive psychological state increased from 67% to 95% (an increase of 28%). The growth of the scale 5 (excellent) from 28% to 56% was especially noticeable. According to the students: “It's easier to work in a team”, “The previous regime has resumed”, “More space, more communication”, which show a clear increase in the general psychological due to the return to full-time education.

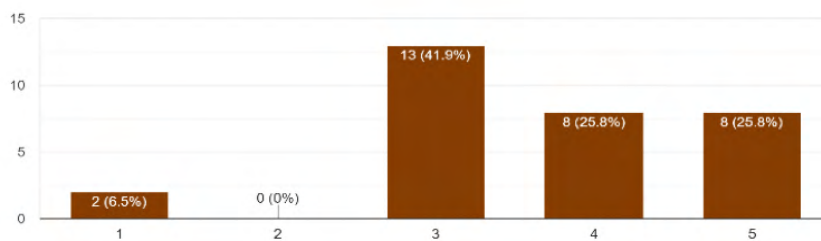


Graph 2. Psychological condition after online learning of Russian students

If we look at the results of the questionnaire survey for the same question of 31 Japanese students, we can see similar dynamics both during the transition to DL, and after the removal of restrictive measures and the transition to the old, full-time education system (Graph 3 and 4). During the transition to the DL system: 42% replied as good, positive (scale 4-5); 26% (scale 3) - satisfactory; 32% (scale 1-2).



Graph 3. Psychological condition during online learning in Japanese students



Graph 4. Psychological condition after online learning of Japanese students

This indicates the similarity of the complex impact on the psychological (mental state) of students to the situation (the spread of coronavirus, the closure of borders, etc.), regardless of a certain territorial affiliation. The results between both groups are shown in Table 1.

During DL	Russian Students	Japanese Students
Scale 4-5	39%	42%
Scale 3	28%	26%
Scale 1-2	33%	32%

Table 1. Comparative results of Japanese and Russian students during the DL

There is also a similarity of qualitative characteristics in comments to the reason for the above mentioned characteristics from Japanese students: "Since I was very busy with distance learning and homework, I couldn't talk to anyone for more than one minute", "I was very worried about making friends. Also, so everything was remote, there were many incomprehensible moments about getting credits and with homework, everything had to be done by yourself, and it was very difficult", "It was difficult to get used to using programs", etc. We would like to note that one of the features of the characteristics on the Japanese side is the prevalence of comments related to the "establishment of friends" and the inability of various fun activities with friends, loneliness (after the beginning of independent life), which could largely determine the decline in the mental of Japanese students. At the same time, based on the survey data, the Russian students emphasized that it was impossible for students to learn the material properly and to conduct face-to-face studies.

Next we will analyse the assessment of the mental state of Japanese students after the restrictions were lifted and return to the full-time education system: 52% replied as - good, positive (scale 4-5); 42% (scale 3) - satisfactory; 7% as bad, negative (scale 1-2) (Table 2). In this case, as in the case with Russian students, there is an increase in the average positive psychological state. The average positive psychological state rose from 68% to 94% (an increase of 26%), which indicates a high desire of students to return to the full-time education system in the context of a complete transition in a pandemic to the remote form of the educational process.

Before and After Pandemic	Russian Students	Japanese Students
Before, scale 4-5	39%	42%
After, scale 4-5	78%△	52%△
Before, scale 3	28%	26%
After, scale 3	17%▲	42%△
Before, scale 1-2	33%	32%
After, scale 1-2	6%▲	7%▲

Table 2. Comparative results between Japanese and Russian students before and after the pandemic

Based on the comparative tables 1-2 and the above data, the following conclusions can be drawn: a) full transition to distance learning can have a negative impact on the psychological state of students; b) similar dynamics are observed for both Russian and Japanese students, which indicates the universality of the process; c) Russian students have an emphasis on the learning process, while Japanese students have an emphasis on communication with friends; d) in both cases, there were comments about the decline in concentration, productivity, etc. to the educational process.

Below we will try to make a comparative analysis (dynamics before and after) of the aspects such as working capacity and productivity, in order to identify how these dynamics during the pandemic and the transition to full DL of the general psychological (moral) state can affect the above aspects which directly affect proper assimilation of the material by the learners.

Comparing the level of performance and productivity before and after the abolition of full DL in the Russian Federation and Japan, it was found that the students' assessment of performance and productivity during the full transition to DL was on average, 23% (the average rate of variation (difference) of the positive average) lower than after the removal of restrictive measures and return to full-time education (Table 3). This indicates about a causal connection of the general mental condition which in turn became the object of the qualitative change of educational process - transition to the distance form of education (2 and 3 types).

Also, the average indicator of the difference in working capacity and productivity of students from the Russian Federation was 14%; students from Japan 31%. How can this difference be explained? If we look to the written answers of Japanese students to the question about productivity and performance during full-time education: "I can work when I see people who are trying," "I thought I could learn more from talking with friends," "I can compare with others how much I have progressed in my studies ", " When I saw working friends, my motivation to study increased", "The enthusiasm of the people around me stimulates me to study ", " Finally, you can learn from each other with friends ", etc. ... , in total, the number of comments that include "friends", "enthusiasm of people around", "motivation from the working atmosphere", amounted to 20 times (two questions: efficiency and productivity). For Russian students, the number of related comments reached only 5 (two questions: efficiency and productivity).

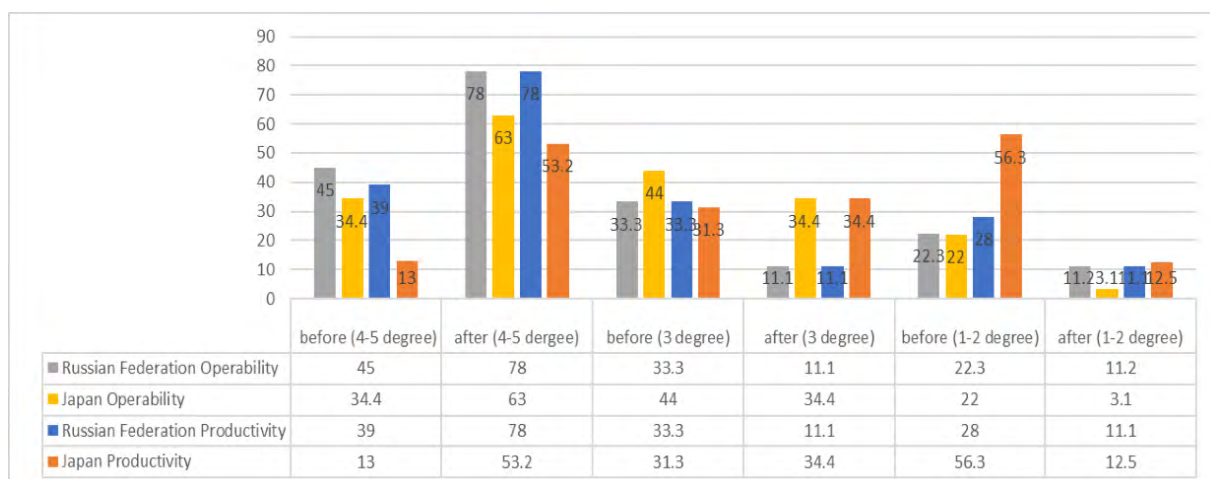


Table 3. Comparison of the level of workability and productivity on the educational process: before and after DL in Russian Federation and Japan

From the data obtained, we can conclude that Japanese students are more susceptible to the influence of the surrounding social environment than Russian students. The behavioural setting in Japanese educational institutions has a stronger effect on student behaviour and academic progress (the influence of others), which can negatively affect the psychological component of Japanese students during the transition to DL. On the other hand, Russian students have a great concentration on the educational process itself, and not on the formation of the conditions of the educational and social environment around them, which gives greater mobility in choosing the current form of education, including increasing the possibility of switching to DL. This also explains the high motivation for learning something new (in addition to basic studies, including a new hobby): Russian students replied for scale 4-5 = 95%, Japanese students for scale 4-5 = 47%, since the level of abstraction from the attachment to a certain social environment among Russian students was higher than among Japanese students.

The overall assessment of online learning by Japanese students was (scale 4-5) 31%, (scale 3) 53%, (scale 1-2) 16%; from Russian students (scale 4-5) 45%, (scale 3) 33%, (scale 1-2) 22%. Full-time education (including face-to-face communication) compared to DL was assessed: Russian students (scale 5) 83%, (scale 4) 6%, (scale 2) 11%; Japanese students (scale 5) 19%, (scale 4) 31%, (scale 3) 47%, (scale 2) 3%. The average positive indicator of Russian students was 89%, Japanese students 97%. It is worth to emphasize that the satisfactory indicator (attitude to full-time education) prevails among Japanese students, which indicates a neutral, for the most part,

attitude towards the standard form of education. Among Russian students, the indicators of this aspect are concentrated only in “good” and “excellent” (scale 4-5). The overwhelming majority of 49 students (Russia and Japan) 80% prefer full-time education to distance learning. Both groups showed a high desire for live communication during the educational process. We can judge about this by the data obtained on the morale of students before and after the cancellation of distance learning.

According to the survey, the following positive and negative aspects of distance (online) education were identified during the spread of Covid-19. Positive aspects: a) continuation of the work process, despite the closure of borders; b) the opportunity to communicate with foreigners; c) saving money; d) the opportunity to study at home; e) the ability to take a lesson at any convenient time (* if distance learning is conducted in a one-way form). Negative sides: a) distancing, lack of live communication (emotional, energetic connection, suggestive influence); b) erasing the boundaries of work and personal space; c) lack of productivity and concentration at work due to a long stay at the computer; d) getting a lot of psychological stress due to the large number of tasks; e) limited question-answer form of communication (inability to ask a question directly, which can lead to distortion of the information received); f) the possibility of problems with the Internet; g) disturbance in daily routines due to time difference.

Conclusion

The survey data of 49 students from two countries of the Russian Federation (18 students) and Japan (31 students) showed:

1. After the transition to full DL, both groups of students observed a decrease in the positive average level of psychological (mental) state, indicating that the mental states were similar regardless of territorial belonging;
2. The declined mental state had a negative impact on student performance and productivity;
3. After a partial return to the full-time education system, the indicators of the average positive level of psychological (mental) state increased, which indicates the importance of full-time education as the only one that creates conditions for emotional, energetic and positive influence between communicators;
4. Based on a quantitative analysis, it was concluded that behavioural setting in Japanese educational institutions has a stronger effect on the behaviour and academic progress of the student, which may adversely affect the psychological component of Japanese students during the transition to distance education. Japanese students are more likely to be affected by the social environment than Russian students;
5. In contrast, Russian students are less dependent on modelling a particular social environment around them for a productive work process, indicating that Russian students are more likely to study at DL than Japanese students.

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