Challenges of Distance Learning during Covid-19 and Statistics from a Socio-demographic Perspective

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In 2020, as a result of the Covid-19 pandemic, certain restrictions were introduced in Georgia, which significantly affected the learning process, and distance learning (DL) was introduced throughout the country. This has created significant problems for both students and teachers. Students from low-income families living in high mountain regions and teachers who do not have the skills to use information technology found themselves in a difficult situation. The aim of this article is not to find the ways of solving problems of DL but to show the statistical trend of difficulties from socio-economic perspective.

Based on expert assessment methods, three large universities in Georgia were analyzed using the method of integral assessment. Challenges of DL were observed taking into account teachers' qualifications, age categories, gender and other social and demographic parameters.

Keywords: *statistics, distance learning, demography, analysis*

In modern digital era accessing the internet still remains the most problematic issue in developing countries like Georgia.

In 2020, travel restrictions throughout Georgia were established, and public places and institutions, including educational organizations, were closed due to the COVID-19 pandemic (Husch Blackwell, 2021). Since the spring of 2020, the Ministry of Education has officially approved the requirement for the forced transition to online education for all the country's educational organizations (Garda World, 2020). The Georgian's education system was highly improved by international partner organizations (Microsoft and the Organization for Economic Co-operation and Development, OECD), but in actuality, access to education in the higher education system was not ensured (OECD, 2019a). In 2020, the Government of Georgia used about 80% of 1.8 billion lari, to finance preschool and secondary education spheres, with the remaining money invested in professional and higher education (Owens, 2021). The rate of enrollment in higher education in the country is overgrowing. Still, the funding level remains relatively low in comparison with international standards (around USD 442 PPP in 2016, compared to over 105,000 USD PPP across OECD countries) (UNESCO-UIS, 2021). This low spending was one of the main reasons the higher education system was unable to effectively respond to the challenges of the pandemic by transitioning to DL.

The economic development of the regions of Georgia strongly depends on geographical location. Therefore, the country is characterized by a high level of social inequality (Gini coefficient of 0.36) (Trading Economics, 2021). Despite Georgia's relatively high Internet penetration rate, many students living in remote rural and mountainous areas are at a digital disadvantage. The situation is even worse for students from poor and/or disadvantaged families. It is not typical for them to have devices with access to online classes and pay monthly bills for the Internet. Due to the low level of social assistance in Georgia,

such university students become socially vulnerable. Today, they are outside the scope of higher education (National Statistics Office of Georgia, 2021).

With the aforementioned destructive factors for a DL provision in Georgia requiring a reorientation of state policy, the crucial problem is that low TIWP impedes DL implementation. Many teachers do not have the skills to use ICT to provide DL, primarily due to the aging workforce in Georgian universities. According to OCED estimates, almost one in four teachers is over 60 years old (compared to, for example, one in twenty across TALIS-participating countries) (OECD, 2019b). The current situation is a consequence of implementing the state policy in Georgia to support an aging teaching workforce amid increasing differentiation between the decrease in the number of students by 21% and teachers by 1% over the past ten years (National Statistics Office of Georgia, 2021). The low TIWP level of universities in DL conditions against the background of the protracted COVID19 pandemic carries an even greater risk of aggravating the problem of the quality of higher education in Georgia: the discrepancy between the professional content of education and the changing landscape of employment following modern socio-economic development trends.

Methodology. Questioning methods and Delphi were used for the study, which were implemented through remote anonymous discussion. An expert group of 50 people has been formed - representatives of Learning Process Management Department of Ivane Javakhishvili Tbilisi State University, Quality Assurance Service of Batumi State University, named after Shota Rustaveli and Akaki Tsereteli State University. The competence of the expert group was ensured by the experience of experts of at least five years in education. The object of the research was the productivity of intellectual labor during distance learning of teachers from above mentioned universities in Georgia.

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To assess student performance during DL an intermediate control of students' knowledge was carried out. The performance indicator they assessed in the range of "0" - "50" points for each discipline to characterize the IWP of an individual teacher.

To assess the provision of the educational process with methodological materials and practical orientation it was evaluated by the students and the expert group during the questionnaire survey. The evaluation was carried out on a 10-point scale, where the grade "1" corresponded to the low quality of the teaching material according to students and experts, its incompleteness, irrelevant data, low semantic load, and inaccessibility of the material (lack of physical access and lack of understanding of the content of discipline). Assessment "10" represented a high quality of teaching material.

Results. The survey was conducted for the 2020-2021 academic year (Google Forms, 2021) and the results from a socio-demographic perspectives can be presented as follows:

The share of young teachers aged 20-24 in the surveyed respondents is 1.5%, those aged 25-29, 3.8%, and those aged 30-34, 7.9%. The percentage of the respondents increases with age, although the age group of 65 is 2.3% and over 65, 7.5%. It is important to note that the share of young people is much lower than that of retired people; we think some measures have to be taken to attract more young people.

According to marital status, married people predominate with a percentage of 59.2%. The share of single people is 23.4%, divorced, 9.8%, and widowed, 7.5%. The share of single and divorced people is highest in the 45-49 age group, 16.1%, and 26.9%, respectively.

Among the respondents, 70.2% have children, and 29.8% do not, which is natural, as this figure almost coincides with the share of single people. As the results of the research show, family and children do not impede personal development. In all cases (it does not matter if the respondent is married and has children), more than 80% of the respondents devote their free time to personal development. Work experience influences many factors. According to the research, 3.8% have less than one year of work experience.

Work experience of 1-3 years is observed by 4.9% of the respondents. The share of teachers with 4-8 years of experience is 12.8%, and 52.9% have more than nine years of work experience. 78.8% of total employed women are in this largest category (9^{th} year of work experience) and 77.0% of men respectively.

77.4% of the respondents stated that they can work from home, although the answer "partially" was given by 20.4% and the answer "no" by 2.3%. In total, 22.7% of the respondents do not have the conditions at home to work remotely.

72.5% of the respondents managed to reconcile family affairs with work, and 27.6% answered "no" or "partially." This figure is approximately equal to the number of respondents who reported not having adequate family conditions. But no matter how surprising, according to the survey women (78.1%) are more likely to combine household chores with work than men (21.9%).

30.2% of the respondents find it challenging to combine childcare with work. It is interesting if these respondents find time for selfdevelopment. At least 81.7% of the respondents with children can devote free time to personal development, however some differences were observed with respect to gender. 79.1% of women with children spend their free time on personal development. The same indicator among men is 89.4%.

71.3% of the respondents feel the help of family members in their career advancement, 28.7% of them answered ‘’partially’’ or ‘’no ‘’. It is interesting to see the connection between this question and gender and between single and married respondents. 69.0% of the women surveyed, 55% of whom are married, and 78.7% of men, 79.2% of whom are also married, report support from their family in career advancement.

In the case of working with a flexible work schedule, only 14% of the respondents prefer to work only from home, which most likely suggests that these are the respondents who have appropriate conditions at home to do that. 20.4% of the respondents prefer to work only from the office. The survey results show that of the respondents who prefer to work only from the office, 61.1% are married and 82.6% are women, and only 17.4% are men. Respondents evaluate DL differently. 41.5% want to work remotely less, while 15.1% want to spend more time working remotely.

When working remotely, modern communication tools and technologies are necessary to achieve the desired result. Professors needed to learn many new software packages to conduct high-level lectures, seminars, or examinations. However, 26.0% of the respondents found modern technologies to cause stress, and the hindering factor was 5.7%. According to the analysis results, the use of contemporary communication technologies becomes the basis of tension in the age group of 50-54, which was observed by 23.2% of the respondents of this age. This response is also high and is evenly distributed in the 45-49 and 55-59 age groups and is 14.5-14.5%, respectively.

From a gender perspective, interesting issue was that the use of modern technologies has proven to be the most stressful for women. The negative attitude against IT was recorded by 33.5% of women and 26.2% of men. It tends that men have more talent to the modern technologies.

During DL, it was necessary to conduct a series of trainings for the professors to provide new methods of teaching, as well as, in many cases, conducting exams. Unfortunately, only 29.1% of the respondents mentioned that the organization trained them according to the requirements.

DL has its advantages as well as its disadvantages. Respondents name various factors from the positive sides. In particular, 17% state that they maintain a balance between work and personal life. For 17.4%, a flexible work schedule is acceptable, and it is sufficient for 47.9% because they can work from anywhere, 9.8% consider that a significant advantage of remote work is cost reduction. It is comfortable for only 7.9%.

The most significant disadvantage of DL for employees in the educational space was the lack of communication with colleagues (42.6%). 73.5% of these respondents are women, and 54.2% of them are married. The second shortcoming was the difficulty of separating working and nonworking time, with 28.3%, indicating a low selfmanagement level. Also in this category, women have a high share - 81.3%, -of which 57.4% are married.

DL and less communication with management is a brake on career growth for some respondents. About 59.4% think so (real answers: I find it difficult to answer, I agree, I agree) and 62.1% of married respondents agree, and 54.2% fully agree with this opinion. It is interesting to assess this issue from a gender perspective. According to the survey, 77.6% of the women agree, and 75.0% fully agree that remote work and less communication with management reduce career advancement chances.

Depending on the age categories, teachers aged 30-44 have been characterized by high level of competence and the ability to use DL technologies. 20-29 years old teachers, were not yet developed professional competencies and the inability to organize themselves. 45 and older teachers have problems with the use of DL technologies.

DL along with negative, also has positive side. The ability to use a flexible schedule was identified as one of the most significant advantages of the remote form of the educational process. A flexible schedule provides teachers with more opportunities for self-development, participation in advanced training programs, and expansion of interdisciplinary competencies.

The factor of the ability to work from home determines the availability of appropriate support (material, informational, technological) for DL. Similar in content to this factor is also the ability to use ICT in the learning process of distance teaching technologies, without which the implementation of DL is impossible.

Since DL leads to an increase in the time spent with the family, support from the spouse in professional implementation, ability to maintain a balance between family and work, and ability to self-organize.

DL reduces communication with colleagues, which was a significant drawback of this form of organization of the educational process and can lead to psychological tension. On the other hand, social isolation reduces the stress associated with peer interactions for introverted educators.

As a DL problem, one can designate the lack of career opportunities, which reduces motivation to work.

Conclusion. Challenges of distance learning more dramatically have been surfaced especially during the COVID-19 outbreak.

It has been empirically substantiated that in the studied universes of Georgia, TIWP is at medium and low levels under the conditions of forced DL. This potentially poses a threat to the quality of education

in the country due to the uncertainty of the duration of the COVID19 pandemic and the social distancing regime it has caused.

It was also revealed that improving the qualifications of teachers in the use of ICT, increasing their motivation and competencies to ensure the effectiveness, continuity and quality of DL are needed.

Data from Our World in Data as of the beginning of February 2022 indicated that Georgia was ranked tenth in the world in terms of the spread of coronavirus and is on the verge of the third wave of the pandemic (Our World in Data, 2022). As a result, this means the continuation of the regime of social isolation and DL for an indefinite period. To ensure a high-quality educational process and its continuity in the conditions of forced DL, remains the high importance priority of Georgian government.

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დისტანციური სწავლების გამოწვევები Covid-19 პანდემიის პირობებში და სტატისტიკა სოციალურ-დემოგრაფიული პერსპექტივიდან

მაია გიორგობიანი

ივანე ჯავახიშვილის სახელობის თბილისის სახელმწიფო უნივერსიტეტის
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ლია ძებისაური

ივანე ჯავახიშვილის სახელობის თბილისის სახელმწიფო უნივერსიტეტის
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ანოტაცია

2020 წელს, Covid-19-ის პანდემიის შედეგად, საქართველოში დაწესდა გარკვეული შეზღუდვები, რამაც მნიშვნელოვნად იმოქმედა სწავლის პროცესზე და დისტანციური სწავლება (DL) დაინერგა მთელი ქვეყნის მასშტაბით. ამან მნიშვნელოვანი პრობლემები შეუქმნა როგორც სტუდენტებს, ასევე ლექტორებს. რთულ ვითარებაში აღმოჩნდნენ მაღალმთიან რეგიონებში მცხოვრები დაბალშემოსავლიანი ოჯახების სტუდენტები და პედაგოგები, რომელთათვისაც ინფორმაციული ტექნოლოგიების გამოყენების გამოწვევას წარმოადგენს. ამ სტატიის მიზანია არა დისტანციური სწავლების პრობლემების გადაჭრის გზების პოვნა, არამედ სირთულეების სტატისტიკური ტენდენციის ჩვენება სოციალურ-ეკონომიკური პერსპექტივიდან.

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საკვანძო სიტყვები: *სტატისტიკა, დისტანციური სწავლება, დემოგრაფია, ანალიზი*