

Fundamental Goals and Purposes of Education in the Modern Digital World

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Abstract

In recent years, the question of what smart education should be has become relevant in the global scientific community. This process has become more active during the pandemic, as everyone in the world has actively started using technology and artificial intelligence, it has become an integral part of our daily lives. Researchers in the field often hold discussions about the concept of smart education, pedagogical experience in implementing online education, and the use of the latest technologies.

The general public often asks about the risks that are associated with this process. What challenges can there be and/or is there a readiness to respond to these challenges? Research A study was conducted in Georgia (Tbilisi) to clarify these issues and the results of the study showed that currently, ChatGPT and Translate applications are the most popular among undergraduate students in Georgian universities. The readiness of students and professors to use artificial AI systems is average or lower, the incorrect purpose of using these applications and incorrect expectations related to them are common, and the issues of confidentiality and security are also unclear. Accordingly, it can be said that the main goal of education policy makers should be to provide the population (regardless of age and profession) with an existing manual (framework project) on a permanent basis, which explains in detail the ways, methods and risks of using AI systems to ensure smart education and promote the development of society.

Keywords: artificial intelligence, smart education, risks, challenges, universities, education policy, Georgia

Introduction

According to a well-known definition, the purpose of education is to promote student achievement and prepare them for global competitiveness, ensuring universality and accessibility of education.

Education is the main pillar of society, on which all kinds of progress are based including personal development, technological development, financial advancement, etc. The

fundamental purpose of education in society is not just a simple transfer of knowledge, but a transformative journey that promotes social cohesion and pushes societies towards prosperity. Education is the cornerstone on which civilizations are built. The laws on higher education of almost all countries of the modern world emphasize this main purpose of education. However, there are a number of differences in different countries including ways of implementing this goal, methods, responsible persons (competences, skills), analysis and evaluation of results, as well as adequate steps to solve existing challenges.

Nowadays, information and knowledge are often considered as strategically important resources, and learning is the most strategically important opportunity for any individual, society or nation. Although access to information and knowledge has increased over the past decade, significant challenges and obstacles remain due to the high level of basic literacy in many countries of the world. It is important for a person to effectively use his or her competences in the digital world at different stages of life. Accordingly, a new approach to literacy is needed that will be more situational, pluralistic and dynamic and will focus on the information, communication, media, technological and digital aspects of literacy [2].

Since Georgia is a post-Soviet country, the above-mentioned differences are even more specific, especially in terms of transparent implementation of the process and adequate steps to address the challenges.

The presented study discusses the challenges, differences, and problems associated with this process, especially in today's digital world, and the ways and methods to solve the problems locally.

2. Artificial Intelligence in Education

Artificial intelligence is interesting and attractive in every person's daily and professional life, regardless of age, profession or nationality, although we all agree that the introduction of this type of education is associated with certain risks, for which there is no clear, unambiguous answer and/or proven ways to solve problems yet.

The goal of artificial intelligence (AI) is to create intelligent computer programs that can perform various intellectual tasks. In the modern world, technologies are already an integral part of the education system. For example, digital platforms, virtual reality, all this is rapidly developing the learning process. Today, learning can be done both at school or university and at home on a computer, and a clear practical example of this is the uninterrupted implementation of the learning process online during the pandemic.

How artificial intelligence helps us: With the help of an AI system, a professor-teacher can detect most of the mistakes of students on the same papers, the AI system gives us a warning and sends a customized message to both the lecturer and the student, which also contains hints on the correct answer. With their help, it is possible to correct the shortcomings in the

learning process, successfully and sometimes independently master the learning material by the student, simplify technical issues, etc.

When using an AI system, it is important to adhere to AI guiding principles and develop effective practices that will protect the confidentiality, security, and transparency of individuals. It is also important that the integration of AI systems in the field of education contributes to the development of critical thinking in students, the development of creative skills, and ultimately, the progress of society [6].

3. The Impact of Artificial Intelligence on Learning and Teaching

The use of artificial intelligence is accompanied by questions about its impact on our future generation, whether it helps us or poses a greater threat to us, and most importantly, whether humans are losing their function, which makes them superior to other living beings in the world.

Some people think that AI systems will effectively help students with disabilities find new ways to interact with them in the learning process. Artificial intelligence algorithms determine the individual needs of students and develop recommendations tailored to a specific person [1]

On the contrary, there are several opinions that students will misuse artificial intelligence and, instead of receiving a smart education, will let artificial intelligence do all the tasks, which will **negatively affect the development of the next generation**, their critical and analytical thinking; The issue of **the competence of professors and teachers** is important, which can become a similar obstacle. **Ethical dilemmas** - because the AI algorithm is not/cannot be adapted to different cultural characteristics, which may not be of any help to some people; and the issue of protecting the **confidentiality and security** of student data. Since these systems collect a lot of information about people, analyze a large number of students' work styles, rules of behavior, etc. [3]

A study was conducted with these issues in mind, and the results and conclusions are presented below.

4. Research

In Georgia, there is an organization called Komkom, which, within the framework of the UNESCO program, created a framework program for media literacy and information literacy for academic staff of higher education institutions, which includes useful materials on access to information, freedom of speech and expression, information dysfunctions, fact checking and verification, teaching information literacy, didactic approaches, etc. The textbook

discusses the strengths and weaknesses of artificial intelligence. **Personalized learning** is named as its main benefit [7].

In Georgia, all higher education institutions use various electronic platforms for educational purposes, for example, students' electronic portals, which reflect their study schedules, activities, assessments received in different semesters, as well as educational platforms (moodle), where training courses, online assignments, etc. are located. On the named platforms, students can view and read course materials, complete interactive assignments, write quizzes, and even take exams. Such learning platforms are very convenient for both professors and students, as they require less time, and the learning-teaching and assessment process is more convenient and comfortable.

Such an increasing use of technology in the field of education has raised several pressing issues. Will smart technologies change people, how students use them, or how professors and teachers teach, because all this will ultimately transform the entire education system [5]. Some researchers believe that it will allow us to replace humans with robot teachers and teaching as a profession will no longer exist. Its impact on society is also a matter of great debate. On the one hand, artificial intelligence cannot be compared to the human mind, a person has emotions, empathy, which plays a big role in communicating with students/pupils. On the other hand, artificial intelligence can take into account the individuality of each child and create a system tailored to them [1].

In our space, despite the fact that citizens occupy the position of teachers, they still actively use artificial intelligence. The reason for this is the ability of artificial intelligence to help professors and teachers perform administrative tasks, correct tests and homework, which require quite a lot of time and effort. Using artificial intelligence, they have more time to prepare lessons and focus on teaching. Our younger generation uses artificial intelligence the most with the help of various applications that can simplify the way to receive education. For example: **ChatGPT**, Google **translate**, **speech**. Each of them has a specific purpose for students. Students use **GhatGPT** to search for materials, prepare projects, or discuss some important issue, while **Google translate** is used more for learning foreign languages. One of the proven methods of using AI systems is to prepare presentation designs with the **Bing AI** application, through which we can not only get answers to our questions, but also provide us with photo materials, videos, etc. for the project.

5. Research Results

The presented research was conducted with undergraduate students and professors at Tbilisi State Higher Educational Institutions.

Research objectives: 1. Theoretical research, which, in turn, includes a review of relevant literature (existing research, theories) on the following issues: the use of AI systems in higher educational institutions at the undergraduate level, including in various fields of science; a systematic approach to the use of AI systems at higher educational institutions. 2. Empirical research - collection, processing and analysis of quantitative and

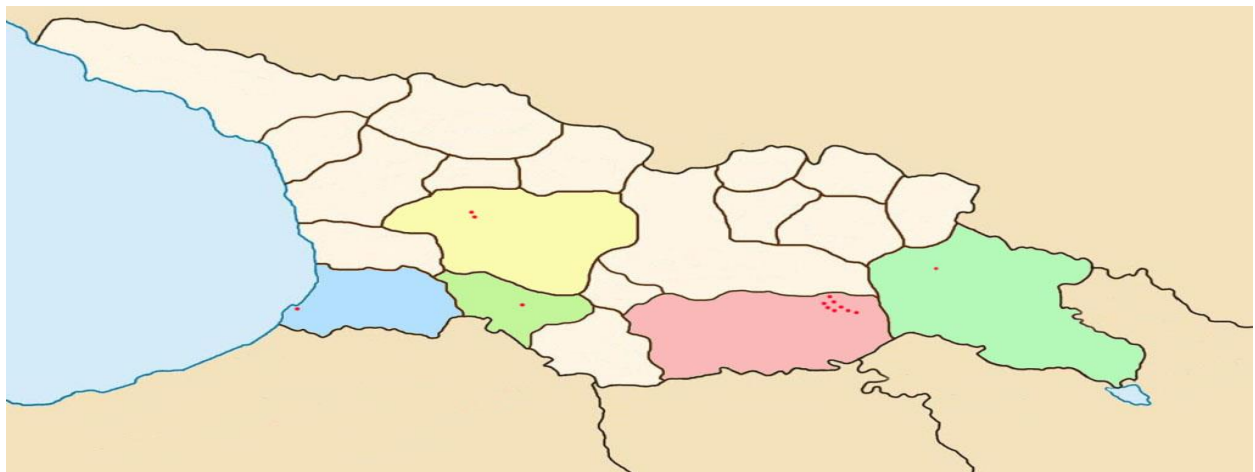
qualitative data. Including: collection of quantitative information on the use of AI systems at the undergraduate level at higher educational institutions; in-depth interviews with students and professors at higher educational institutions (see Figures and interviews in Annex).

Research Questions: Based on a review of international literature, a thorough study of Georgian higher education legislation, and a study of the strategies and missions of higher education institutions, it was revealed that there is little research in the international literature on the use of smart education and AI systems in the learning process, while in Georgia there is no such research at all, except for the framework project prepared by ComCom and individual initiatives from lecturers. Thus, this paper aims to fill this gap and includes the following questions:

1. How actively do students and professors of Georgian higher education institutions use artificial intelligence?
2. Which application do they use specifically?
3. What challenges do they face in the process of using AI?
4. Who do they turn to if they encounter problems?
5. What recommendations do they have for those makers education policy?

The research process aimed to cover not only the capital but also the regions of the country (West, East, South). I have selected 6 universities in total, 80% of the universities in Tbilisi, and 70% of the universities in the regions.

The universities selected by me are presented on the map:



- Batumi (Adjara)
- Kutaisi (Imereti)
- Akhaltskhikhe (Samtskhe-Javakheti)
- Tbilisi
- Kakheti

Quantitative and qualitative methods were selected and used for the research. The research was carried out in two stages. At the first stage, quantitative data was collected (see Figures 1 and 2), and at the second stage, qualitative data (in-depth interviews). As a result of quantitative methods (questionnaires), problematic issues were identified, on the basis of which a qualitative study was conducted (in-depth interviews with students and professors of target universities). The results obtained from thematically constructed questions were processed through thematic analysis.

Quantitative research questions:

1. How actively do they use AI systems?
2. Do they use any one application?
3. Do they have problems in the process of using AI?
4. In case of problems, who do they turn to?
5. Do they turn to anyone for help?

Figure 1 University professors

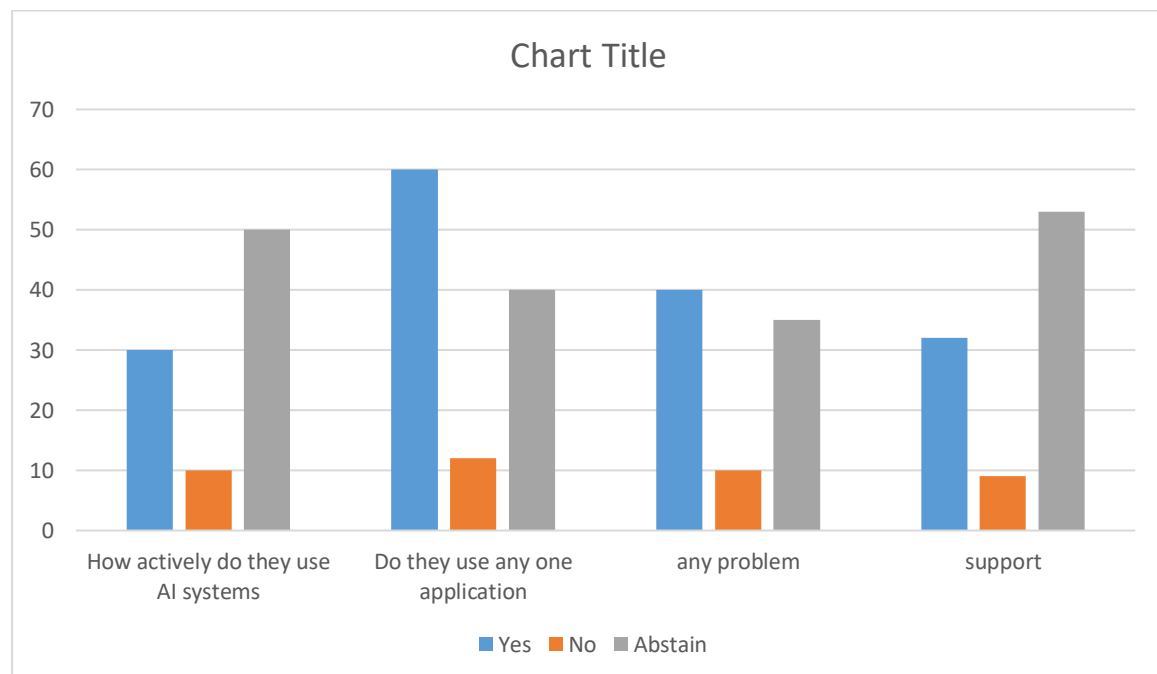
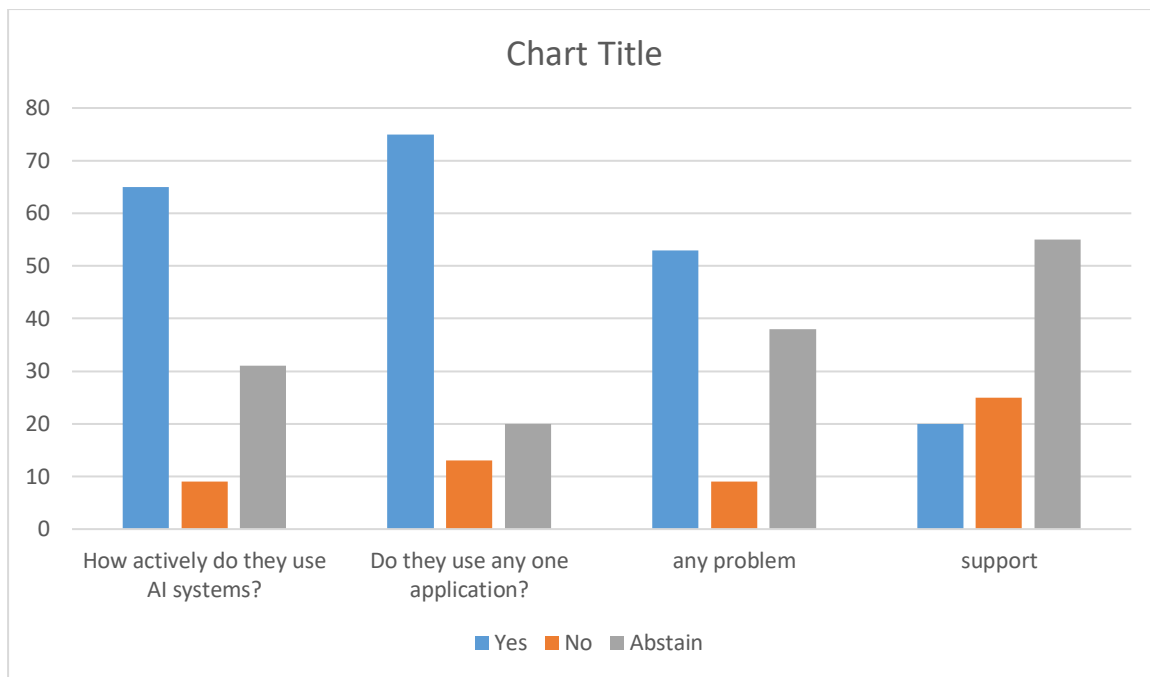


Chart 2: University students (BA)



According to the materials obtained as a result of the research, it can be determined that Georgian students (BA) use artificial intelligence applications more actively in the educational process, because the information received in this form is sometimes simpler and more understandable for them than the information provided by the lecturer, they can receive a very large amount of material on a specific subject in a short time, however, in the process of using them, it is necessary to thoroughly process this material, since there is often incorrect information. On the part of professors and teachers, the use of AI applications is less, because they still resort to traditional methods, although some of them noted that the use of AI systems during the assessment of test tasks is very effective. Both sides (student/professor) noted that it is necessary to protect confidentiality and these applications should be protected from unauthorized access, and also, education policy makers should adopt relevant laws and periodically check the results of the work of AI systems and their impact on society and take appropriate measures.

Summary:

- Students will use AI systems more actively in the future;
- ChatGPT is popular for specific queries and searching for relevant materials;
- Artificial intelligence helps the next generation to receive education in simplified ways;
- It is necessary to impose certain “sanctions” on artificial intelligence through appropriate algorithms and to prevent certain problems;
- AI can create perfect educational materials and establish a high standard of research (with developed plagiarism detection programs);

- It is necessary for education policy makers to develop appropriate laws, which will regularly check the practical work of AI systems and, if necessary, make changes for the benefit of the development and well-being of society.

It is clear that the future education space cannot exist without technology, but an effective balance between innovation and human relations is needed, because technology will create great opportunities in education, but their proper use requires cooperation between administration, professors and teachers, and society. In the end, it can be said that AI systems truly have the potential to bring unprecedented positive changes to all areas of our lives, and even more so in the field of education, if we, as a society, use it in a relevant way. It is necessary to fully utilize the potential of artificial intelligence, this powerful and important technology, in a way that minimizes risks and prevents negative impacts.

Appendix 1

In-depth interview with students

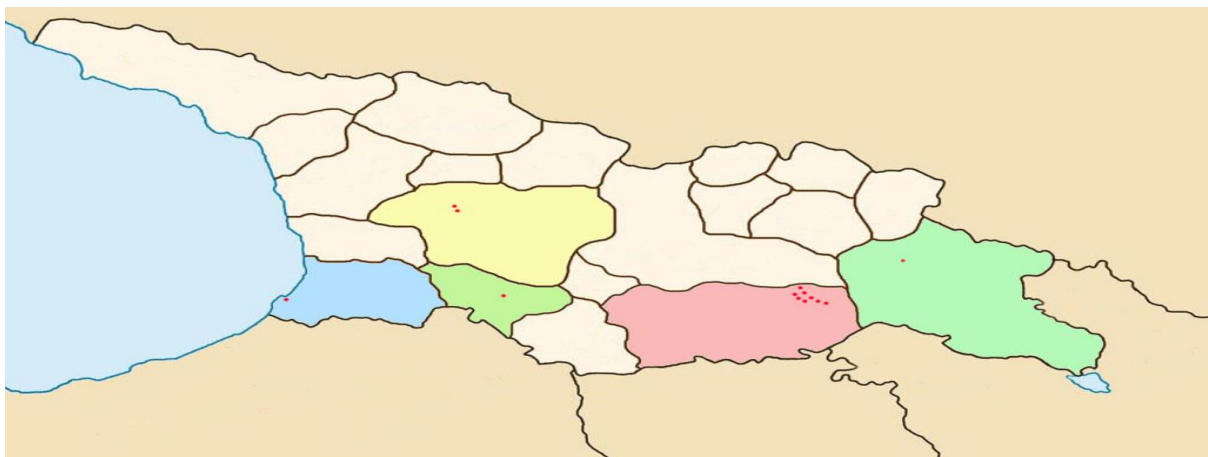
1. Which university do you study at and which faculty?
2. How actively do you use artificial intelligence? In the educational process or in the learning-teaching process?
3. Which application do you use specifically? And why?
4. Have you had any problems in the process of using AI? What specifically? And how did you solve them?
5. Do you have any advice/recommendations for university management and/or education policy makers? Please specify

Appendix 2

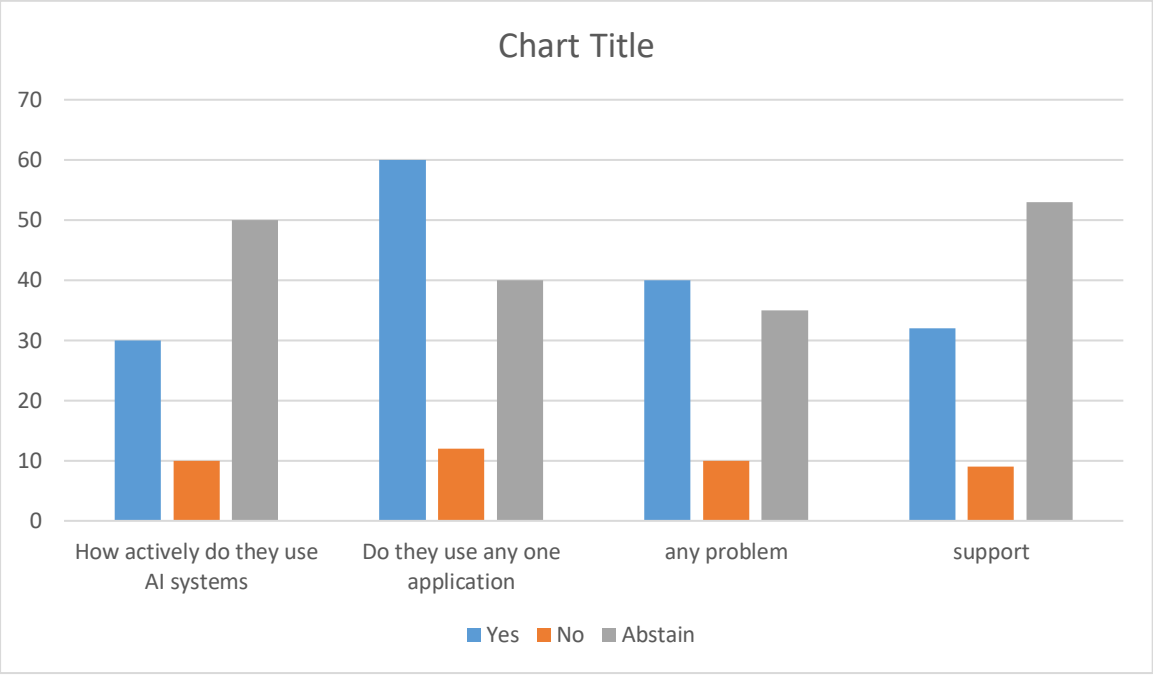
In-depth interview with professors

1. Which university do you teach at and which faculty?
2. How actively do you use artificial intelligence in the educational process?
3. Which application do you use specifically? And why?
4. Have you had any problems in the process of using AI? What specifically? And how did you solve them?
5. Do you have any advice/recommendations for university management and/or education policy makers? Please list them.

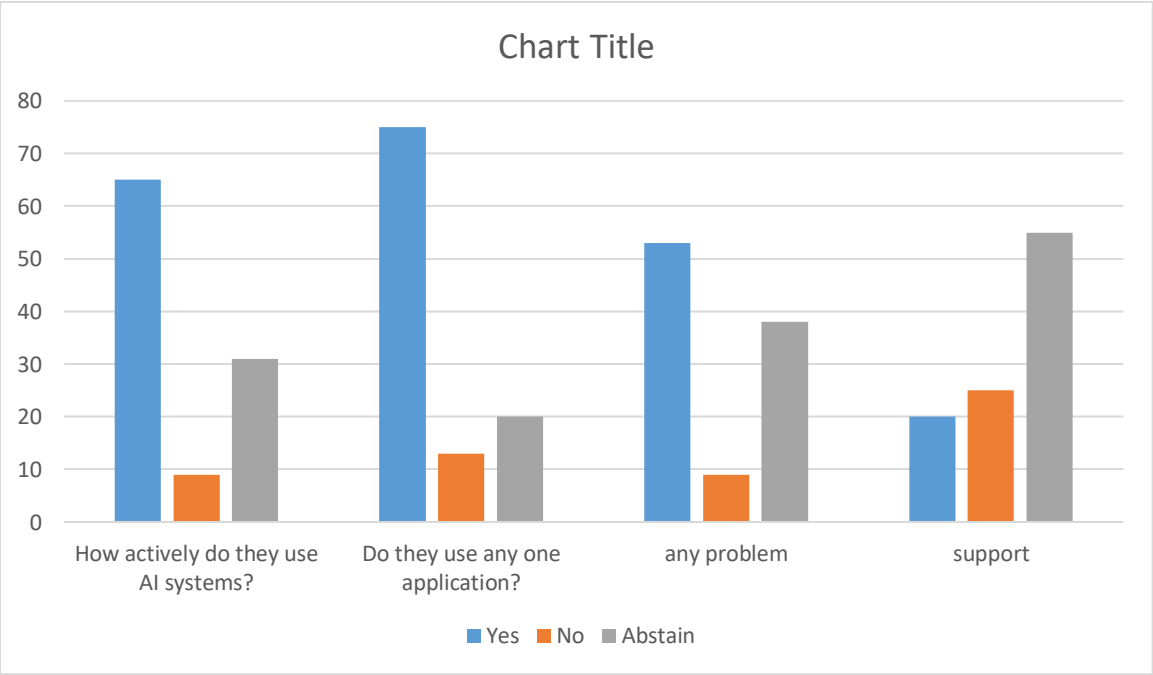
Appendix 3



Appendix 4



Appendix 5



Appendix 6

№	LEPL	Overall Number of Students
	Universities of Tbilisi	
1	Ivane Javakhishvili Tbilisi State University	22548
2	Georgian Technical University	21622
3	Ilia State University	17344
	Regional Universities	
1	Batumi Shota Rustaveli State University	6702
2	Samtskhe-Javakheti State University	1726
3	Telavi's State University	1638

In the second stage of the multi-stage cluster selection, I selected the faculties and programs. Since the faculties in the higher education institutions do not function according to the same principle, I tried to choose the faculties from my study population so that I could touch upon the doctoral program in almost all fields.

Appendix 7

HEI	Faculties
TSU	Faculty of Humanities
	Faculty of Law
GTU	Faculty of Chemical Technology and Metallurgy
	Faculty of Architecture, Urbanism and Design
ILIAUNI	Faculty of Arts and Sciences

	Faculty of Business, Technology and Education
BSU	Faculty of Economics and Business
SJSU	Faculty of Natural Sciences and Health
	Faculty of Engineering, Agrarian and Natural Sciences
TESAU	Faculty of Agrarian Sciences

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