



**THE IMPACT OF THE USE OF INTERNET MEMES IN THE PROCESS OF  
TEACHING INFORMATION TECHNOLOGY DISCIPLINES ON STUDENTS OF  
HIGHER EDUCATIONAL INSTITUTIONS**

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### **Abstract**

This work is about exploring the possibility of using internet memes (funny illustrations) in such an important aspect as learning process in higher educational institutions. At the present time, when nonstop content consumption has become commonplace, modern people have begun to better perceive new information and knowledge through social media networks including humor, interesting comparisons and coincidences with real daily life. It is necessary to take into account associative thinking, which comes to the fore in the study of new disciplines. The authors consider the prospects of using memes in the process of obtaining new knowledge and consolidating the material covered. Also, all the advantages and disadvantages of such a modern and non-standard approach are studied based on the data obtained in the survey of students. The materials of this work are the survey, analysis and experience of the teachers of the Suleyman Demirel University (Kazakhstan) with a specialization in "Data Analytics".

### *Introduction*

The current generation of people are so accustomed to Internet memes that they no longer think about the fact that memes are found at every turn. But does everyone remember how it all began? How did memes move from local imageboards to the global network? The authors of this work asked themselves the question of the emergence of the first Internet memes in online communities. An Internet meme in the usual sense is consistent with the second definition of a meme from the Oxford Dictionary: "A meme is a picture, video, piece of text, usually humorous in nature, that is copied and quickly distributed by Internet users." [1]

In a broad sense, the term "meme" can refer to any idea, symbol, manner or mode of action transmitted from person to person, sometimes unconsciously, through speech, writing, video, audio, etc. The term was first used in the book by Richard Dawkins "The Selfish Gene" [2], written back in 1976. But the internet memes were first mentioned back in 1996 in a collection of articles [3] by scientists from the Massachusetts Institute of Technology edited by Peter Ludlow.

Taking into account the development of IT technologies, globalization and the characteristics of a new generation of students, there is a need to improve educational processes. From authors' point of view, one of the solutions to this issue can be Internet memes, which occupy a special place in modern culture.



The object of this study is teaching Information Technology disciplines with using Internet memes as a special kind of visualization of modern culture. Their peculiarity lies in the ability to attract attention and remain in memory for a long time through their unusualness and uniqueness (many Internet memes have their own style, recognizable by many Internet users), brevity, in the ability to evoke a response both in content and design. Also, Internet memes are a completely new phenomenon in folklore (folk art, which includes not only the oral aspect, but also other activities). They can express people's reaction to certain events in various spheres of society and bring their own humorous character.

The relevance of this study lies in the fact that the younger the students, the less time they can be focused on one task. And social networks have built modern trends, visual content is easier to perceive than content in text format. And short videos on Instagram and TikTok have significantly reduced the time of focused attention on something serious, since for the most part it is entertaining.

In addition, many educational institutions are currently forced to switch to distance learning due to the COVID-19 pandemic, which makes it necessary to:

- introduction into educational processes of an increasing number of ways of conveying knowledge that would effectively help memorize new and repeat old information and increase students' interest in learning;
- identify the best way for students to perceive information.

#### *Related Works*

In "Losing Your Voice" article, James DiGiovanna defines Internet memes as "talk snippets" that display a common phrase or idea that is released and works in its own way in many discourses. In his article, James DiGiovanna defines Internet memes as "talk fragments" that display a common phrase or idea that is released and begins to work in its own way in many discourses. According to DiGiovanna, the entire Internet is essentially a collection of memes, just as a letter or speech can be viewed as a collection of rhetorical expressions. [4]

The Usenet community created in those years, which was part of the wider NSFNet (National Science Foundation Network), for the exchange of information between research centers and universities became the place where the first Internet memes appeared. It was not yet the modern Internet with sites connected to the global network - it was more like a forum or a mailing list, and instead of the Internet browsers, special software was used for each community.



The very first Internet meme, many consider the famous "Godwin's Law". Mike Godwin made his observation about one of the basic properties of Internet communication on the Usenet network already in 1990. [5] It is formulated as follows: "As the Usenet discussion grows, the probability of a comparison that mentions Nazism or Hitler tends to one." That is, the hotter and more active the dispute on the Internet becomes, the more likely it is that one of the opponents will compare his interlocutor with the Nazis or immediately with Hitler.

"Memes" have become widely used in popular culture as they have become more entertaining. As noted by T.E. Savitskaya in her work "Internet memes as a phenomenon of mass culture", the meme is currently becoming a complex phenomenon, including the mass turnover of edited photos, photo montages and videos and has the ability to instantly spread. [6]

#### *Methodology*

The purpose of the study is to substantiate the effectiveness of Internet memes as an additional tool for memorizing new information in the educational process. To achieve it, the following tasks were set:

- to conduct the final exam on the subject "Introduction to the Python programming language" with a bonus task, in the form of a task where students need to draw a memorable meme that was shown during lectures, and explain the topic where that same meme was encountered.
- conduct a survey to get feedback from 40 students on the use of memes in the course of classes.

#### *Data Collection*

Throughout the whole semester, 2 teachers of IT disciplines actively added popular memes on the topics of classes to their lectures. Over 30 thematic memes about programming and course topics according to the curriculum were shown, reviewed and discussed over 15 weeks. Authors would like to note that memes are an auxiliary materials and the educational process should not include the presentation of information exclusively through Internet memes, but be used to draw attention to the most important points of the theory part.

The survey, in which 40 university students participated, consisted of 3 sections. First of all, the authors of this work introduced the respondents to the objectives and informed that the survey is anonymous. Very interesting questions were asked in the survey, the answers to which can show the general trend of the current situation among young people.

Thus, in the first section, questions were asked about the general nature of the use of social



networks. The first question of provided survey was do students use social media networks?

The authors also asked the respondents about how much time do they spend on social media networks per day and the most important question about the purpose of using social media networks - do students use social media networks for humorous content or not.

Ending the first section was decided by the question of the number of active social networks. How many social media platforms do they use every day (e.g. Instagram, Facebook, VK, Twitter, Tiktok, Youtube, Pinterest, Mail.ru, Telegram, etc.)

In the second section, the authors included questions about previous semester experience and asked more specific questions. To begin with, it was necessary to understand whether students knew the meaning of the word meme and how they understand this word itself, so an open question was posed where students could fully disclose this term.

Since the main contingent of respondents are 3rd year students, the survey included a question about students' previous experience of perceiving new academic information through memes - Have they seen lectures or teaching materials that contained memes in their courses at the university

If the answer to the last question was "yes", then the next question was whether they remember the content of lectures in those courses.

It was very important to understand whether memes really help to remember important parts of the lectures, so the question was asked whether they think they remember the content of those lectures thanks to the memes used in them and whether, in general, memes specifically helped the respondents themselves in understanding IT disciplines at the university. Students also gave their answers to the relevance of the memes that were used in their classes, which is a very important component in the selection of memes by teachers.

And at the end of the survey, there was a final section where the following question was: To what extent would you recommend your teachers to use memes in their lessons? (1 - would not recommend; 2 - would recommend only for some and/or specific courses; 3 - would recommend for all courses (in this semester))

Well, the final criterion for evaluating the use of memes in lectures at higher educational institutions is a bonus task during the session exam. The students were asked to get a bonus point by drawing their favorite meme from the lecture presentations. Looking ahead, this is what led the authors of this paper to draw a positive conclusion about the use of memes on the lectures.



### *Results and Discussions*

Based on the survey responses, the authors were able to show and prove that first of all, students develop associative memory by linking the image of a well-known meme with useful information in class. Thus, this information is easier to remember, and a person feels more confident - almost the same when using a computer at home for entertainment purposes. Immersion in a familiar environment makes memorizing the material more interesting and motivates for further work.

To begin with, let's look at the answers of the respondents to the questions of the first section, with general questions. Thus, it can be seen that all 100% of students use social networks.

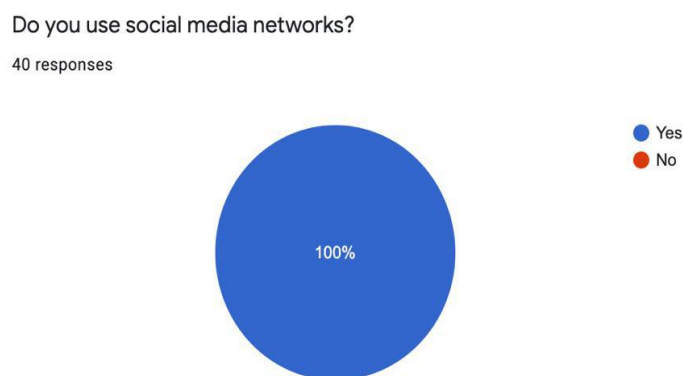


Figure 1: 100% are users of social media networks

Because of Covid-19 and pandemic situation, it is very understandable that all respondents use social networks, but the amount of time spent is scary. Almost 70% of respondents answered that they spend more than 3 hours on social networks per day - this is almost 46 full days a year. And only 7.5% noted that they are in social networks for less than 1 hour.

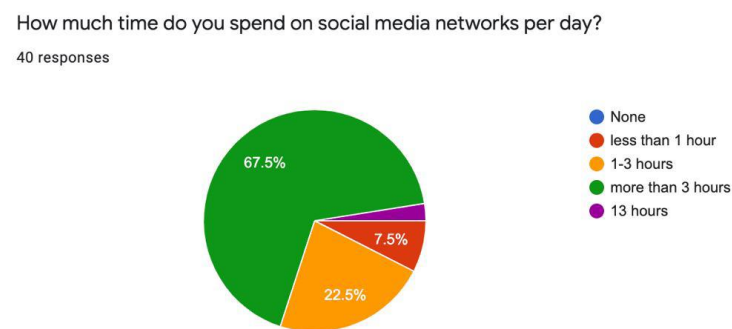


Figure 2: Spending time on social networks in hours per day



A very important aspect is familiarity with popular and relevant memes. Therefore, it was important to understand what goals respondents are pursuing on the Internet. And 80% confirmed our idea of popularizing memes in social networks. Most people search, find and share liked memes.

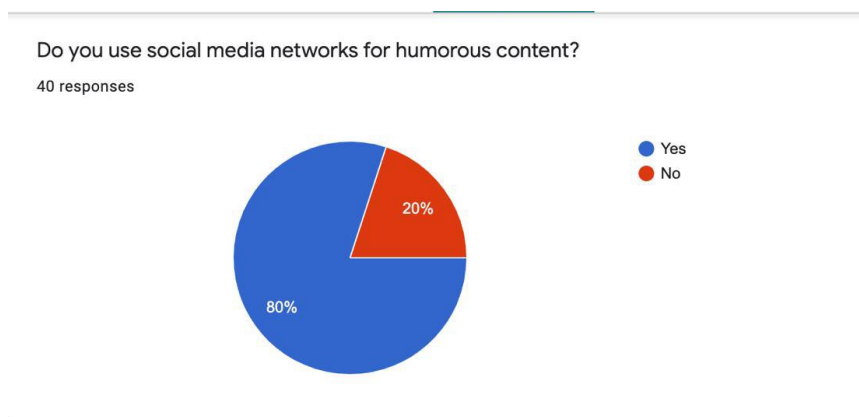


Figure 3: Humor or something else?

It has already become normal - such a wide variety of different social networks, which have their own characteristics and distinctive qualities. Thus, the average student now has 3-4 or even more than 5 active social networks to which he or she spends their time every day.

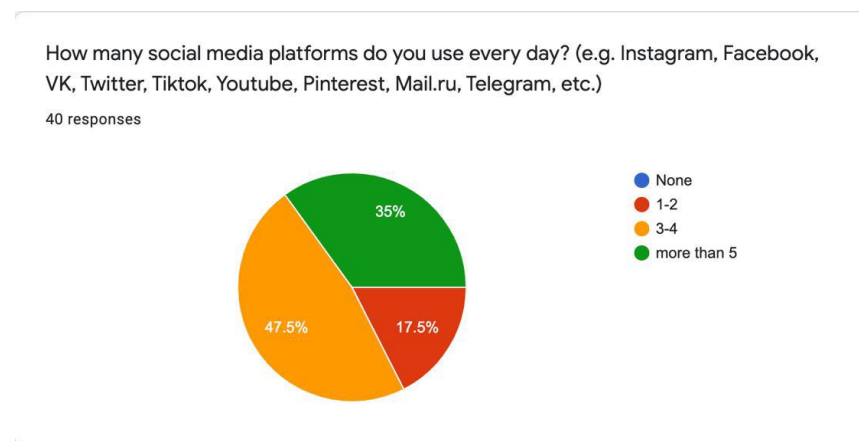


Figure 4: 3-4 different social networks every day

88 percent of those surveyed have encountered memes in class in one way or another, which is a surprising number. More than half answered that they remember most of the material covered, where the supporting material was memes. Only 5% answered negatively that they could not remember a single topic covered.

80% noted that memes helped memorize new material during lectures, associative thinking played a major role in the perception of information. This is an excellent result, which tells the



authors that memes really have a positive effect on the educational process of IT disciplines.

The final topic of discussion is that 98% of those who passed this survey recommend that teachers use memes as an auxiliary material to consolidate

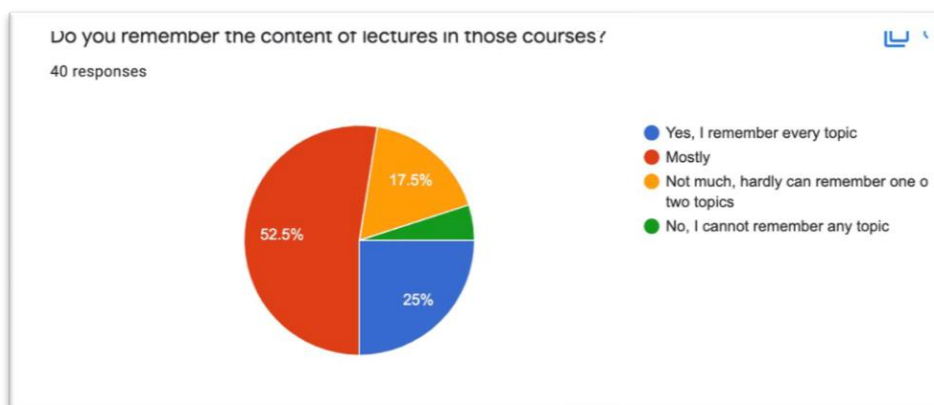


Figure 5: More than half remember the content of the lecture by the memes

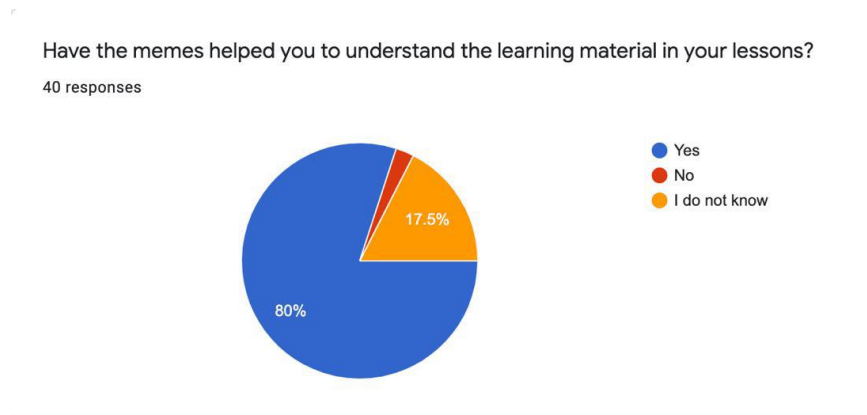


Figure 6: 80% mentioned that memes helped them to understand materials

the understanding of a new topic, as well as for students' associative memory. This method becomes very relevant in the new and modern realities. The influence of social networks, the Internet and the process of digitalization are changing the psychology and essence of people. People change, which means that the approach to their education also changes.

### *Conclusion*

This work confirms the thesis that it is always necessary to look for new solutions to attract the attention of students. Teachers should always be adaptive and find all sorts of opportunities to be on the same wavelength with students, thereby involving them in teaching a new subject. Therefore, the use of memes is highly recommended for use in the learning process, especially for adult students in higher academic disciplines, especially in the IT world and disciplines that are





directly related to the computer and the Internet.

Internet memes that have lost their relevance can cause misunderstanding and a negative reaction in the classroom. The teacher is required to clearly monitor the novelty of the material that he presents to the audience. It is important to note that for students with increased activity

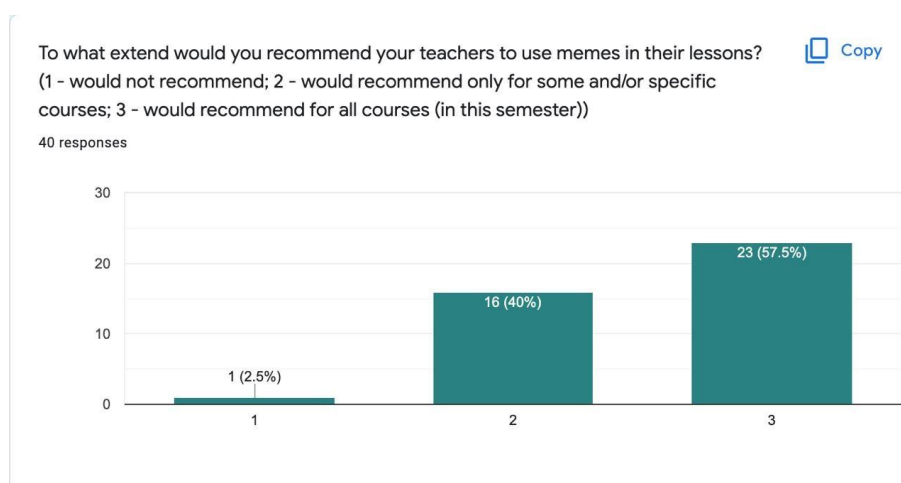


Figure 7: Recommendations to use memes

In the future, it is planned to conduct a survey for a larger audience, at least 1000 students should participate.

It is also planned to analyze students' drawings for bonus points to find the so-called excellent student's style. Using computer vision and machine learning techniques, build models to predict an approximate final result based on a drawn meme. Due to the fact that with this work, the authors were able to confirm that the students who scored the best final scores for the final exam drew a meme and revealed a related topic for the highest mark.

## References

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3. Peter Ludlow, "High Noon on the Electronic Frontier: Conceptual Issues in Cyberspace", 1999
4. James DiGiovanna, Losing Your Voice Online
5. Mike Godwin, "Godwin's Rule of Nazi Analogies", 1990
6. Savitskaya T