The Flipped Classroom Approach to Developing Digital Skills for Critical Thinking and Media Literacy

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Abstract

The flipped classroom is an innovative pedagogical approach that "flips" the traditional learning model, shifting the emphasis from teacher-led instruction to active student engagement. This approach not only promotes self-directed learning but also fosters the development of digital skills, critical thinking, and media literacy. Through the flipped classroom, learners have the opportunity to engage with educational materials at their own pace, stimulating their activity and involvement. This process typically involves the use of various digital tools and resources, such as video lessons, interactive websites, software applications and more.

The flipped classroom approach is a well-suited method for cultivating digital skills, critical thinking and media literacy among students. By actively involving students in the learning process and utilizing diverse digital tools, this approach prepares young individuals to effectively navigate the challenges of the modern world, where digital technologies and the media landscape play an increasingly significant role.

Thiis publication presents an analysis of the work of a research team at Burgas Free University in testing intellectual products related to developing critical thinking and media literacy in the information society. Within the framework of the research, video lessons on eight topics were developed using specialized software, through which learners develop the components of digital competence. The educational materials were tested with students of Pedagogy and Psychology at Burgas Free University. The study presents the results of an anonymous and voluntary survey on the satisfaction of students with the tested interactive training. The aim was to determine the level of student satisfaction with the "Flipped Classroom" method, as well as their attitude towards this innovative educational approach. The results of the empirical study confirm the thesis that the "flipped classroom" method is effective and preferred by both learners and teachers. It provides for better knowledge acquisition, develops information processing skills and encourages active learning.

The flipped classroom emerges as a transformative educational approach that fosters student autonomy, enhances digital literacy and cultivates critical thinking skills, preparing learners for success in the digital era. Further research and implementation of this innovative pedagogy are guaranteed to fully realize its potential in shaping future-ready learners.

Keywords: *Digital skills, digital transformation, critical thinking, media literacy, approach, flipped classroom, digital tools*

Introduction

Imagine a world where you are not just a consumer of information but an active participant in the digital space. A world where you can analyze information, recognize fake news and generate your own content. A world where you feel confident and competent in the digital era.

The key to this world lies in critical thinking skills and media literacy and the place is the "Flipped Classroom." Here, learners are not just listeners and performers but active participants in the learning process, engaged in various activities such as performing interactive tasks: analyzing information, problem-solving, teamwork; discussions: sharing ideas, presenting arguments, learning through experience; creating content: writing different types of texts, making videos, working on projects.

In the "Flipped Classroom," learners are in the centre of the learning process, the teacher is a guide and advisor, a mentor and moderator of the learning process and technologies are tools for development.

The key skills that are formed and developed are:

- Information analysis: recognizing credible sources, distinguishing facts from opinions, fact-checking information.

- Critical thinking: Not everything that is written is true. Therefore, it is necessary to ask questions and seek different perspectives.
- Creating content: Expressing one's thoughts, generating ideas, communicating with others.

The "Flipped Classroom" is interactive, efficient, and forward-looking because learning is fun and engaging, which is a prerequisite to achieve better results and be prepared for the challenges of the digital era in which Generation Z and the Alpha children live and prepare for the future.

In the age of the digital revolution, the development of digital skills is crucial for anyone who wants to succeed in the modern world. Critical thinking and media literacy are two key competencies that are becoming indispensable in the digital era.

Developing critical thinking skills requires the ability to analyze, evaluate, and interpret information received through various digital channels. Digital skills allow information to be filtered and evaluated, fake news and media manipulations to be recognized, and informed opinions to be formulated on various topics. Given that the media play a significant role as an important source of information and influence, the formation and development of media literacy is of paramount importance. Developing these competencies requires an investment in time and effort into education and practice.

Educational institutions need to develop their programs that include training in critical thinking and media literacy, using modern methods and learning technologies. At the same time, the learners themselves need to be active and conscious users of information, constantly seeking opportunities to improve their digital skills because critical thinking and media literacy are essential to cope successfully with the challenges of the modern world and for our personal development.

Methodology

This publication presents the results of a study focused on the testing of intellectual products developed to stimulate critical thinking and media literacy in the context of the information society. The research was conducted by a team from Burgas Free University and was based on the "Flipped Classroom" method.

Eight video lessons were developed within the study, using specialized software. The video lessons aimed to develop the components of digital competence in the students. The elaborated materials were tested with 780 students in Pedagogy and Psychology at Burgas Free University in the period October - November 2023. The testing took place in an innovative environment, combining the application of various interactive methods and strategies.

To evaluate the students' satisfaction from the training, an anonymous and voluntary survey was conducted. The survey was implemented in November 2023 using Google Forms and included 158 students. The aim of the survey was to evaluate the students' attitude towards the "flipped classroom" method and its effectiveness. The results of the survey are presented through quantitative and qualitative analysis. The quantitative data shows that a significant part of the students are satisfied with the training using the "Flipped classroom" method. The qualitative analysis of the open-ended responses from the survey reveals that the students appreciate the interactive nature of the training, the autonomy in mastering the material, as well as the opportunity for discussion and exchange of ideas.

The study showed that the intellectual products developed with a focus on the development of critical thinking and media literacy are effective and contribute to students' acquisition of knowledge. The application of the "Flipped classroom" method proved to be an innovative approach that was well received by the students.

Development of Digital Skills for Critical Thinking and Media Literacy - Essence and Parameters

The ability to handle information has become the cornerstone of lifelong learning, which is a stimulus for active civic awareness, expanding employment opportunities, promoting adaptability, social integration, and personal development. For that reason educational systems in different countries strive to meet these societal needs by introducing new elements into curricula and expanding approaches, methods and means of education.

One of the main challenges facing education in the digital era is cultivating the individuals' critical autonomy regarding information from various sources, which is directly related to the theory of critical thinking. Robert Ennis, one of the leading researchers in this field, defines critical thinking as "meaningful, reasoned thinking whose purpose is to decide on what to believe or how to act" [4].

Acquiring new knowledge and skills is a prerequisite for the formation of critical thinking, and its basic principles are:

- It is independent - we must be able to form our own opinion based on acquired knowledge;
- Information is the starting (not end) point of critical thinking; It starts with asking questions and is oriented towards problem-solving;
- It seeks persuasive arguments, as there may be more than one solution, and it needs to be proven why the preferred assertion is logical and practical;
- Discussion and challenging ideas are necessary to improve one's own position [5].

Critical thinking is the ability to analyze, evaluate, and interpret information objectively. In the digital context, this includes the ability to recognize fake news, to verify sources of information, and to understand the context of messages.

In the era of digital transformation and innovations in society, the requirement for competent use of information technologies, media, and global networks is mandatory. Not by chance, in 2005, media, computer, and information literacy were declared among the "vital literacies of the 21st century." Based on the theoretical research of numerous scholars, it can be summarized that "acquiring media literacy is an educational approach aimed at giving media users greater freedom and choice by teaching them how to access the media, analyze, evaluate and create media products. Media literacy is understood as a set of skills to use, critically analyze, create, and transmit messages/media texts in various forms using media tools to promote critical thinking in individuals" [3].

Regarding media literacy, its social function occupies a special place. Together with the presented skills, it requires moral and ethical behaviour in the social media environment, responsible creation and publication of messages using the tools of the respective social media. Possessing such literacy guides users through the abundance of blogs, posts, comments, videos, advertisements, etc., facilitating the use of communication technology, understanding the code of messages, content, and the context in which the generated messages are placed. This includes not only the skills to analyze text, audio, video, and graphics but also to understand the media techniques used to manipulate information.

Media literacy is creating a habit in the audience to ask questions related to the vast media stream. This habit should be formed in both the youngest and oldest users of media products. "And it manifests itself in our ability to apply critical thinking to all media - from the music videos and billboards surrounding us to various web products. In the contemporary globalized and commercialized world, when encountering any information carrier, every person should be able to ask questions related to the authorship and ownership of the media product, the interests behind it, the messages sent, and their value. Media literacy is an approach that teaches us to ask the right questions, and whether we reach the right answers depends on who, where, and how we ask them" [1].

Those who possess media literacy make informed choices from blogs, posts, comments, videos, and other sources, realizing that someone has created them with a specific purpose in mind. "This literacy assumes responsible handling of the freedom to create and transmit messages in social media, which requires appropriate filtering of the published information to preserve social norms and values, especially for users from vulnerable groups such as teenagers, outsiders, minorities, and others who seek their identity and can become easy targets for targeted harmful manipulation" [2].

Based on what was stated above, we can conclude that the development of digital skills for critical thinking and media literacy is a complex process that includes:

- mastering basic digital skills: searching for information on the Internet, working with word processing programs, email, social networks, etc.;
- developing skills for analyzing and evaluating information: recognizing reliable sources, fact-checking, distinguishing facts from opinions, detecting manipulations and propaganda;
- fostering critical thinking: the ability to ask questions, analyze arguments, recognize logical fallacies, formulating one's own opinion;
- cultivating communication and collaboration skills: online discussions, teamwork, sharing information.

Educational institutions not only have an important role in developing digital skills for critical thinking and media literacy but also have a responsibility towards all participants in the educational process. Teachers can integrate these competencies into the teaching process in various ways:

- using digital tools and resources: interactive lessons, online exercises, digital projects;
- teaching students how to search for and evaluate information: working with reliable sources, fact-checking, distinguishing facts from opinions;

- stimulating critical thinking: discussions, problem-solving, information analysis;
- developing communication and collaboration skills: teamwork, online discussions, projects.

Parents should not be ignored either as they can also contribute to the development of digital skills in their children. This can be done through:

- limiting screen time: balancing digital and non-digital time;
- discussions about online safety: rules for online behaviour, protection from online predators, cyberbullying;
- searching for and evaluating information jointly: discussing the reliability of sources, fact-checking;
- encouraging critical thinking: asking questions, analyzing information, forming one's own opinion.

Research Results

The analysis of the research results conducted by the research team from Burgas Free University provides valuable information regarding the effectiveness of innovative teaching methods. The developed intellectual products are aimed at key aspects of modern education - the development of digital skills, critical thinking, and media literacy.

Student Engagement and Interest: The involvement of students in testing the eight topics is marked by a high level of activity and interest. The significant number of participants - 780 individuals who expressed a desire to complete the test before the video lesson was provided - emphasizes their commitment and desire for prior acquaintance with the material. This is an indicator of active involvement in the educational process and a strive for independent knowledge enrichment.

Effectiveness of the Methodology: A measure of the successful application of the methodology is the fact that 533 students completed the initial tests, demonstrating acquired knowledge on the topics. This indicates the effectiveness of the method and the increase in motivation for learning among students.

Positive Feedback and Satisfaction: Excellent ratings received from all the 158 participants in the survey reflect the satisfaction with innovative teaching. Students have evaluated the educational content as memorable and emotionally impactful, which is an important aspect of effective learning.

Interpretation of the "Flipped Classroom": Responses to the question regarding the definition of the "flipped classroom" show that surveyed individuals have a diverse understanding of the method. The ability to choose multiple statements reflects the multi-layered interpretation of the method and its adaptability to different educational contexts. (Figure 1)

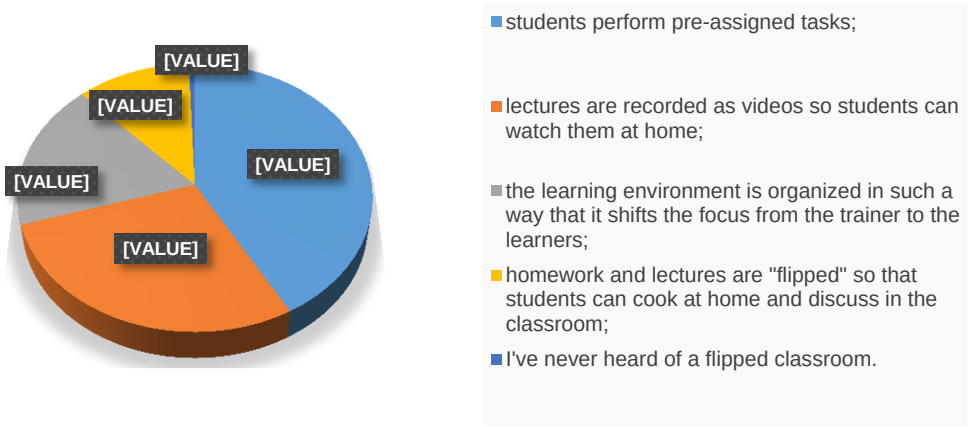

Fig. 1. *Definitions Corresponding to the Interpretation of the "Flipped Classroom"*

The survey results reveal that 41.8% of the participants consider the "flipped classroom" method a means to encourage self-preparation and active participation in team learning activities during class. This practice transforms the role of students from passive listeners to active participants who develop practical skills and collaboration.

28.5% of the respondents positively evaluate the ability to watch recorded lectures as videos outside the classroom, providing them with flexibility and the opportunity for deeper engagement in discussions and problem-solving in class.

17.7% of the respondents interpret the "Flipped classroom" as a method that stimulates independent activity and engagement by creating a learning environment focused on learners' needs.

11.4% of the participants in the survey consider the method as "flipped" lessons where homework is completed in class, optimizing time and increasing the effectiveness of the learning process.

The small percentage of 0.6% who are not familiar with the "flipped classroom" emphasizes on the need for wider dissemination of information about innovative methods in education.

In summary, the results of the responses to the first question highlight the students' inclination towards a more dynamic, engaging and independent education. The "flipped classroom" emerges as a preferred method in modern education, providing materials in advance through digital platforms and freeing up time for active learning in class. This approach fosters independence, creative thinking and practical skills in students, aligning with the dynamic requirements of the digital era.

The "Flipped classroom" method offers numerous opportunities for innovation in education. Apart from the above-mentioned advantages, it can contribute to the development of personal skills such as self-organization, time management and self-assessment. Students learn to take the responsibility for their own learning, which is a valuable quality in their professional lives. Additionally, the "flipped classroom" can encourage teachers to use more diverse and interactive teaching methods that engage students and motivate them to actively participate in the learning process. This may include group projects, role-play, debates and other forms of active learning that enrich the learning experience and aid in better understanding of the material studied. It is important to note that the successful implementation of the "Flipped classroom" requires appropriate preparation and support for teachers, as well as access to the necessary technological resources for students. Training teachers in the use of new technologies and methods is crucial for the success of this approach. We would like to emphasize that the "Flipped classroom" is not a universal solution for all educational situations. It should be adapted to the specific needs and context of each educational program and group of students. Continuous evaluation and reflection on practice are necessary to ensure that the method contributes to achieving educational goals.

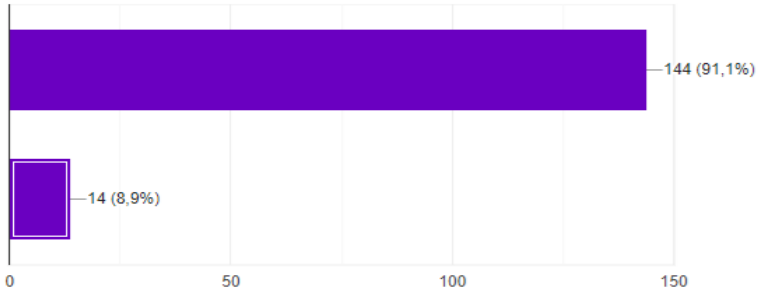

Fig. 2. *Results Demonstrating the Difference in Learning Activities between the Course Applying the "Flipped Classroom" Method and Other Academic Disciplines*

Regarding the question related to the students' overall impressions - whether there is a difference in the learning activities between the course where the "flipped classroom" method is applied and other academic disciplines, the recipients' responses are categorical (Fig. 2).

This question is key to evaluating the effectiveness of this method. 91.1% of recipients claim that there is a difference between the two types of courses. This is definitive proof that the "flipped classroom" is a new and different approach to learning.

What are the main differences in the learning activities between the two types of courses?

Preparation for classes

In a traditional course, class preparation usually consists of studying the course content at home. In the "flipped classroom", the preparation for classes is different. Students watch video lectures or read online materials outside the classroom. This enables them to familiarize themselves with the learning content offered through various resources at a time convenient for them and at a pace suitable for them.

Classes

In a traditional course, classes usually take place in a lecture or seminar. The lecture is conducted by the teacher and is aimed to impart knowledge to the students. The seminar is aimed at discussion and problem solving. In the flipped classroom, classes usually consist of discussion and

problem solving. Students are more active participants in the classes, as they are already familiar with the study material.

Assessment

In a traditional course, assessment is usually based on an exam. In the flipped classroom, assessment can be based on various criteria, such as participation in discussions, project presentations, problem solving, exams.

Advantages of the Flipped Classroom

The differences in the learning activities between the course in which the “flipped classroom” method is applied and the other learning disciplines lead to a number of advantages for students:

- Greater activity - students are more active participants in the learning process since they are already familiar with the learning material. This makes them more engaged and motivated to learn.
- Better understanding of the material studed - students have more time to reflect and deepen their knowledge of the material. This leads to better understanding and memorization of the material.
- Better development of independent learning skills - students learn to prepare for classes and solve tasks independently. This gives them valuable skills for their future professional careers.

The results obtained from the survey visualize the outline of the ‘big picture’ in the future development of education, namely that the "flipped classroom" method leads to significant changes in the learning activities.

The high percentage of participants reporting a difference highlights the importance of innovation in the learning process and the impact that the "flipped classroom" has on learning activities and the overall student experience. The results provide further evidence for the successful integration of this method and show that it can change students' perceptions and experiences in the learning environment. This high percentage of participants who notice the difference serves as an incentive to expand and implement such innovations in curricula in order to improve the quality of education.

When asked whether the students would like to be trained by this method in other academic disciplines, the results were measured with a 5-point rating scale ranging from "not at all willing" to "yes, very much." The highest score is for the preference "yes, very much" and the lowest is "not at all". (Figure 3)

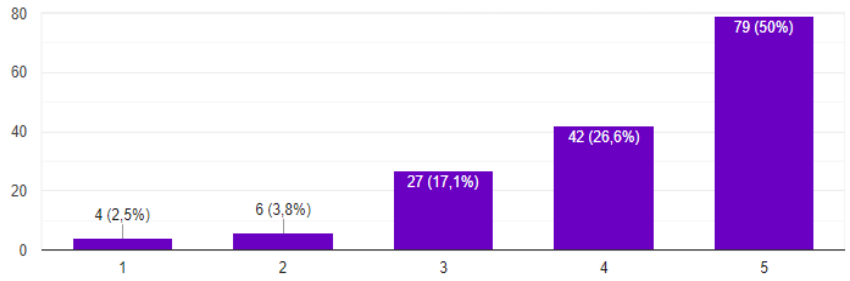

Fig. 3. *Rating scale for the willingness of the recipients to be trained using the "flipped classroom" method*

The results of the analysis show a diversity in the responses. 50% of the learners choose the highest rating from the scale - "yes, a lot". This can be interpreted as a clear sign of desire and a positive attitude towards the application of the method. This result also indicates that the majority of the learners (50%) are highly motivated to participate in learning based on the “flipped classroom” method. This is a significant indicator for the effectiveness of this method and shows that it is able to interest and motivate learners.

26.6% of the respondents give a score of 4, which emphasizes that there is accaptance of other learning methods. This percentage provides information on the possibility of combining the "flipped classroom" with other educational strategies. This shows that learners are open to new approaches in learning and are willing to experiment with different methods.

The results of the answers to the third question show that the "flipped classroom" method has the potential to become an effective educational approach. However, to achieve the maximum effect, it is necessary to take into account the preferences of the learners and to ensure the necessary preparation and support from the teachers.

The students also shared that they prefer the flipped classroom method over traditional methods because it develops their information processing skills. They indicated the following advantages of the method:

- The pre-test motivates them to get to know the topic in more detail.
- Video lessons give them the opportunity to work more actively and participate in discussions.
- Working together helps them understand the material better and develop teamwork skills.

These statistics provide a solid basis for conclusions about the acceptability of the “flipped classroom” method and reflect the degree of support and willingness to implement it in education. The diversity of responses provides valuable information that could guide future educational strategies and improve the learner experience in the learning environment.

Discussion

The results of the survey measuring the interest and willingness of learners to participate in learning based on the "flipped classroom" method provide important indicators of the effectiveness and applicability of this educational method in the context of different academic disciplines.

Advantages of the “Flipped Classroom” Method

The method has a number of advantages, which can be the reason for a positive attitude of the learners towards it. These advantages include:

- *Greater learner engagement:* The flipped classroom method requires from the learners to prepare in advance for the lessons, giving them the opportunity to familiarize themselves with the material and ask questions if they need further clarification. This leads to greater engagement of learners in the learning process and a better understanding of the material.
- *More active learning:* Classroom activities using the "flipped classroom" method focus on hands-on exercises, discussions and other forms of active learning. This encourages learners to actively participate in the learning process and develop their critical thinking and problem-solving skills.
- *Development of independent learning skills:* The method enables learners to work in a more independent mode, which helps them to develop their independent learning and problem-solving skills.

Variety in answers

The diversity of responses to the survey shows that the flipped classroom method is not a panacea and is not suitable for all learners. Some learners prefer to receive the information in the classroom, while others prefer to prepare in advance.

Opportunities for improvement

Based on the results of the survey, some suggestions can be made to improve the effectiveness of the flipped classroom method. These suggestions include:

- *Preparation of learners for the application of the method:* Learners must be informed about the advantages and disadvantages of the "flipped classroom" method, as well as about the expectations set before them.
- *Teacher support:* Teachers must be trained in the implementation of the "flipped classroom" method and have the necessary resources for the preparation of teaching materials and the conduct of classes.
- *Evaluation of the effectiveness of the method:* It is necessary to conduct regular evaluations of the effectiveness of the "flipped classroom" method to identify areas that can be improved.

Implementing the flipped classroom approach can bring significant benefits to the educational process, but it also comes with several challenges and limitations. Here are some of them:

Technical and Resource Challenges

- *Access to Technology*: Not all students have access to the necessary technology at home, such as computers or stable internet. This can create inequality in access to educational materials.
- *Technical Support*: Teachers and students may encounter technical problems that can hinder or delay the learning process. Adequate technical support is critical.

Pedagogical and Organizational Challenges

- *Preparation of Materials*: Creating high-quality video lectures and other learning materials requires time and effort from teachers. Not all teachers have the necessary skills to create such resources.
- *Change in Teacher Role*: Teachers need to transition from traditional teaching to facilitating learning in the classroom, which requires different pedagogical skills and may face resistance from some teachers.
- *Students Not Watching Videos*: Some students may not watch the necessary video lectures at home, which can hinder their participation in classroom activities and create gaps in their knowledge.

Engagement and Motivation

- *Student Motivation*: The success of the flipped classroom depends on the engagement and motivation of students to watch the learning materials at home and prepare for classroom activities.
- *Parental Support*: Support and understanding from parents are also important. They need to be informed about the new approach and support their children in adapting to it.

Assessment and Evaluation

- *Assessing Progress*: Evaluating students' progress can become more difficult as both individual and group activities in the classroom need to be assessed.
- *Objectivity and Fairness*: Objectively and fairly assessing each student's contribution in group activities can be challenging.

Cultural and Social Factors

- *Cultural Differences*: In some cultures and educational systems, traditional teaching is still preferred and widely practiced. Transitioning to a new approach may encounter resistance.
- *Social Interaction*: The flipped classroom requires more active social interaction among students, which can be challenging for more introverted students or those with fewer social skills.

Implementing the flipped classroom approach offers many opportunities to improve the educational process, but it also requires careful planning and adaptation to the specific conditions and needs of students and teachers. Ensuring technical infrastructure, supporting teachers, and engaging students are key factors for its successful implementation.

Conclusion

The analysis of the proposed methodology for training through video lessons reveals significant advantages in the context of the modern information society. The excellent evaluations received by the participants of the survey underline the high degree of continuity and effectiveness of the method. The pre-test, which stimulates interest and directs attention to the video material, acts as a catalyst for learner engagement. This highlights the importance of motivation as a key factor in the successful acquisition of knowledge.

Combining visualization, interactivit and collaboration, video lessons offer a multi-sensory approach to learning that is capable of facilitating the learning of complex concepts and improving long-term memory. Students have expressed that such an approach not only makes it easier to remember information, but also affects their emotional perception, which is essential to the educational process.

The "flipped classroom" method is confirmed as an effective tool that transforms traditional teaching and learning methods. It not only improves knowledge acquisition, but also develops critical thinking and information processing skills, thus promoting active learning and independent work of students.

The statistical data presented in the study serve as a basis for future analyzes that can lead to a deeper understanding of learner needs and preferences. Such analyzes are crucial for the development of educational strategies that are adaptive and responsive to the dynamic demands of the information society. The results of such tests can stimulate the integration of innovative methods and materials in the learning process, which would lead to more engaging and interactive forms of learning that are in sync with the technological and social changes in the modern world.

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