Social media in Training - Risks and Challenges

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ABSTRACT

Many teachers use social media in a different way in the learning process - to share learning resources, to assign homework, to organize observations and discussions, for teamwork, to conduct student opinion surveys, etc. However, the transfer of educational activities to a virtual social environment has its risks and negative consequences. They are many and varied - sharing low-quality digital educational resources, stealing intellectual property, identity theft for subsequent abuse, damaging the reputation of learners and educators, disrupting the mental health of learners, and others. On the other hand, many merchants in the education market are attracted to the idea of making quick profits. The low capital costs of starting such a business, the ability to create a cheap educational product, often based on free and low-quality educational resources, and the ability to reuse and sell digital content at almost zero cost make online training a very profitable business. The article reviews the main risks of using social media in training.

Key words: Social Media, Social Media and Education, Social Media in Training.

1. INTRODUCTION

In modern information society, *training and education have become commercial products. Online learning is very appealing to a large group of people* - young people, workers, mothers with small children, people living in areas without educational institutions, people with low purchasing abilities, people with disabilities and others. The advantages of this type of training are many - learning at any time, from any place, using interactive educational resources, the opportunity for synchronous and asynchronous communication with a teacher, teamwork, etc. On the other hand, *online training is an interesting opportunity for entrepreneurs*. The low financial investment to start such a business, the option to create an inexpensive educational

product and the possibility of multiple sales of digital content at almost zero cost, make online learning a very profitable business.

The high demand and supply of online educational products in recent years has led to great competition. All e-commerce customer acquisition means are also used in online training. *The pursuit of the rapid and inexpensive development and sale of educational services and products leads to many problems* - the use of false, fake or inferior content, theft of intellectual property, plagiarism, uncontrolled spam, identity theft and others.

Unlike the unfair trade in ordinary products and services, which harm only a few members of the society, *online training affects large community groups of working age*. The situation can be compared to the situation in the pharmaceutical industry where every merchant can uncontrollably produce and sell drugs that may endanger the health and lives of people. However, there are strict regulations in the public health sector and compliance is monitored. Violators are punished and, in some cases, their right to practice business is revoked. In the education area, there is no such control. Besides, it's not about censorship, it's all about control and strict rules.

The article presents a *study on the risks and challenges of using social media in training*. A number of problems are discussed, which are related to the educational content quality, authorship and plagiarism, information security of participants in educational processes, use of false and foreign personalities, the mental health of students, and others. Solutions of some problems - models, methods and frameworks that use different scientific approaches and algorithms are presented.

2. QUALITY OF CONTENT

The state and the authorities, as the main regulator of the processes in the society, make great efforts to regulate the education market to ensure the quality of education and to

accredit the educational institutions. ***Many teachers in secondary and tertiary education use social media in education*** - to share learning resources, to assign homework, to organize observations and discussions, for teamwork, to conduct student opinion surveys, etc. A similar is the situation with informal training, which is not strictly regulated but also gaining popularity.

There is a huge amount of structured and unstructured educational content on the web. Its quality ranges from high-quality to malicious content and spam. A key question, which should be paid attention to, is ***the development of methods and tools to evaluate the quality of the content***.

One possible approach to identifying high-quality content sites is by means of user input on social media. Agichtein explores options for ***using feedback from the community to automatically identify the high-quality content***. A general classification framework has been developed to combine evidence from different sources of information, which can be adjusted automatically for a given type and quality of social media [1].

Lex proposed another approach for assessing the quality of content, using formulae and classification by different criteria. The approach is suitable for the so-called web archives, whose purpose is to collect and store information. Lex's research aims to ***develop automatic methods for evaluating the overall rank, quality and importance of web content***. He composed three classifications each of which is responsible for a different set of functions. The authors demonstrate specific examples of good results when using their proposed method for quality evaluation. The usefulness of a document is determined by its position in the list of results [2].

Kurniawan notes that the rapid development of social media goes faster than the content check systems, fake news and plagiarism systems. There are neither any mechanisms to validate the shared information, nor it requires a mandatory indication of the shared information source. The authors are working on the task of ***detecting plagiarism of text and images by using a URL.*** They use methods for measuring Smith-Waterman Algorithm and Latent Semantic Analysis. The survey measures the accuracy of both methods with local alignment and term-document approaches on the social media Facebook. The result of research by the method of Smith-Waterman Algorithm with local alignment is better in testing documents when the level of performance is up 99.77%. The same algorithm can be used to detect similarities in images and as a fraud analyzer [3].

Another approach to detecting plagiarism is presented in [4]. The latter offers a ***conceptual framework for improved***

detection of plagiarism. It is based on the integration of information from social networks, information from the Web and advanced semantically enriched visualization of information about authors and documents, which allows the research of the obtained data by searching for advanced plagiarism templates. The developed software application model based on framework proved its efficiency such as making improvements in the stages of confirmation and investigation of plagiarism.

In [5] are discussed various aspects of plagiarism in social media. Now, anyone can be an author, not just selected authoritative public figures and experts. The ***growing tendency to steal content on social media*** is worrisome. In many cases, works of authors are published, who have not proven to be experts in the field or well-known authors. Consumers believe this releases them from any moral obligation to indicate the source and can present the content as their own. Nevertheless, that someone is not an expert in a particular field in case it's worth to be quoted, he should be granted the honor. The nature of social media is also a prerequisite for plagiarism. Some are for short communication, and ***adding a further piece of source information is often considered a waste of time and space***. Lack of responsibility on social networks is another drawback. ***No one holds the author responsible even if he quoted someone else's content without stating the original source***. That is why many consumers do not feel ethically engaged. Examples of such behavior are growing at a rapid rate, and this is becoming a huge problem for authors content and scholars content. At the moment, ***it is all about the moral and ethics of authors on social networks in order to solve this problem***.

Despite the improved collecting, classifying and storing high-quality content from social networks and media, there is a flow of false, fake, low-quality or even malicious information. The reason for this is the lack of control and feedback. ***Spam has been invading all forms of digital communication in recent years***. The increasing user base of social platforms like Facebook, Twitter, YouTube, etc., revealed new opportunities for spammers. The freedom to provide free content as their own has encouraged spammers to benefit social platforms. E-mail and search engines, which are the early victims of spam, have been attracting the attention of scientists for quite a long time. A significant amount of research and efforts are aimed at coping with spam for these two technologies. Social networks, which are quite different in nature from search engines and e-mail are characterized by different types of spam. In addition, due to the continuous and rapid evolution of social media, spamming tools themselves are developing very fast. There are a number of attempts to ***develop a tool to fight social spam***.

Selling online services is highly dependent on increasing customer reviews posted on opinion sharing websites. Unfortunately, this fact has tempted spammers to attack this type of website in order to promote new products. IT professionals *developed various tools for spam detection in consumer reviews* in order to filter spam and provide hope and information to customers, producers and researchers. However, controlled approaches suffer from data misbalance due to lack of review and spam in data sets. Filtering systems based on variations in the rating are easily deceived by intelligent spammers and content-based methods are much more expensive to work on real data [6]. Heydari provides *an effective system for spam detection where rating diversions based on the content and reviewers.* To overcome the disadvantages mentioned above, all of these factors are synthetically examined at suspicious time intervals, captured from time series examinations and by pattern recognition techniques.

You research confirms that *online reviews have been increasingly used by individuals and organizations in their purchasing decisions for a product or service*. Unfortunately, driven by the pursuit of profit, *spammers post false reviews and opinions to mislead customers.* Intelligent spam detection reviews is a big challenge. The author proposes a method of generating a customized lexicon for calculating the aspect rating [7].

A number of methods have been described in the scientific literature to detect false reviews and opinions. However, most of them perform review text analysis, which makes them unsuitable for many systems where the accompanying text is optional or not possible. In addition, these approaches often require large resources to process textual analysis. In [8] *a product rating method that focuses on the differences between ratings of spammers and those of the majority of honest reviewers* is presented. A light, effective method for detecting unwanted messages based on these differences is proposed. This method uses a binomial regression to identify reviewers with an anomalous portion of ratings that deviate from the opinion of the majority. Experiments with real data show that the approach is able to identify spammers successfully. In comparison with widely used approaches based only on ratings, shows that the proposed method is capable of achieving comparatively high accuracy of detection while using less computing time and resources.

Often, we can see false or half-right content in social media for the mere purpose of becoming a sensation. The aim is to attract users to review or like the message, which will later bring to content reliability, expert opinion or any other benefit. *Image building on social media has become an end of itself* because the best image facilitates sales even if the products or services are poor. This phenomenon of modern society is based on research in the field of psychology and marketing as well as it is largely due to social media. Everyone is an author. Many people who are not considered to be experts in a particular academic field have the opportunity to express themselves and show their value, talent, products and creations. On the other hand, *social media has opened the gates of mediocrity, poor quality content and fraud*. In the fuss that social media creates, it is very *difficult to see the quality and well-known authors*. It appears to be a strange paradox when *the removal of borders and information release make it more difficult to find true information. It is because information space is so polluted that the discovery of quality content is hard.* With so many authors, users do not know which authors to follow and who to trust on social networks.

3. EDUCATION, SOCIAL MEDIA AND INFORMATION SECURITY

One of the main risks that can affect all organizations using social media in education is related to *information security*.

In the center of educational space are the student and the teacher with their knowledge, skills, competencies and authority [9] as well as the confidence created between them. The transfer of training to the virtual world makes it necessary to add measures to *protect personal information in order to prevent fraud and other malicious activities by third parties*.

The use of social networking in education makes these challenges even greater due to the high trust between the student and teacher [10]. Generally, it is based on the occupied academic position of the lecturer, teacher's expertise, the dedication of students, and last but not least - trust in the student's goodwill to the teacher. If we transfer this trust in social media in the context of online learning, it may suggest with a high degree of confidence that *the majority of malicious actions, which lurk in cyberspace, can relatively easy be applied to students, teachers or educational institutions.*

Keeping the confidentiality of consumers' information is a key task. Confidentiality can be defined in many ways, but we will try to provide our own definition, namely: the *ability of the user of a service to determine and control what, how much and how important information is collected, stored and processed for him*. As we have already noted, the trust between students and teachers is high and it is possible for a great volume of important information to be shared through social networks. One of the biggest concerns is the protection of sensitive information [11], but we should not confine only to it, having in mind that it also involves *consumer action on social media, e.g. likes, can also extract data about sexual orientation, political views, religious beliefs and others* [12].

Some of the educational activities such as discussions, case studies, feedback, etc., which are applied in social media, might request and obtain such information when the participants are not being familiar with laws (e.g. GDPR), ethical or other rules and do not realize that they are breaking the law. In a survey, conducted among students, it is found that after their initial registration, the majority of their personal information is left in a publicly accessible user profile, which undoubtedly poses a risk for them [13]. *We should not neglect the other possibility of information leakage, namely from the social media itself*. Similar to the case of Facebook-Cambridge Analytica when leaked data related birth dates, residence, current location, personal messages, etc. of millions of users leaked [14].

Another important issue which we can address to is *fake profiles on social networks.* Fake profiles are those created to hide the real person who uses social media. That is one of the main tools to steal sensitive information through social networks [15]. They are risky for other malicious activities for users by manipulating information, trolling, online bullying and others. The problem has deepened in recent years and even Facebook admits that about 6% of fake profiles are available [16].

According to Kareem, fake accounts are several types - Sockpuppet, Sybil accounts, Spam Bots, Social Bots, Chat Bots. They can be used for different purposes - from advertising to avoiding a ban [17].

In an educational context, fake profiles of students or teachers can be misused in a number of cases, such as:
- *distribution of unwanted content (spam)*, i.e. with ads of fake teacher's profile where certain books are advertised for students to purchase;
- *asking for personal information* of all kinds with fake educational purposes;
- *posting false content*, including educational content, fake news, advertisements, etc.;
- *damaging the reputation* of teachers, students and administrative staff;
- *distribution malicious software*, and many others.

Along with the increase of fake profiles number, the *number of stolen identities in the virtual space is increasing* as well. According to a study by Insurance Information Institute in the US, for the period of 2015-2018, this increase is about 10% per year, but between 2017-2018 the increase is 19.8%. *Identity theft can be done in two ways.* The first is to obtain personal information about a person and register a new profile in the system, and the second is to gain access to an existing profile with the obtained personal information. The actual realization of identity theft can be theft of financial, student, criminal, medical or social media identities; insurance number; driver's license, etc. *Crimes committed with stolen identity are varied and can lead to large financial losses, theft and business espionage, publication of photos and video with intimate nature or related criminal activity*, and more [18].

A research held at The Whittemore School of Business and Economics at the University of New Hampshire shows that 96% of students use Facebook, and 84% - YouTube daily [19]. Some of the students use a single password to log into multiple sites, which increases the risk of password theft. *An extreme danger can be the option to log into many sites and applications that allow the so-called "login by third party" through services like Facebook Login*. For example, there are many shopping websites, which have preserved credit and debit cards information. Thus, a stolen social media account can result in significant financial losses. Another problem, addressed by Englehardt from Princeton University is the *opportunity to collect user data through scripts and tracking behavior of users on the web without their knowledge* through "login with Facebook" [20].

Another complex problem is so-called *social engineering* or *human hacking*. It is a form of manipulation of a person or organization that seeks to discover sensitive information. Nowadays victims of attacks of this type are increasing significantly and specialists in information security constantly warn about the negative effects [21]. A study by Wilcox also *confirms the growing correlation between social media and social engineering* [22]. Like most attacks on security, and *this type is based on trust, so relatively easily students, teachers or even entire educational institutions may become victims of any kind of attacks on security*. A typical example is a social network post from a stolen or fake academic profile that has a link to a web page for filling in personal information or installing malware on the user's machine.

4. PEDAGOGY

Many different models for technology-assisted learning have been described in the scientific literature. They differ in their form, methods, methodology, ability to personalize training, adaptability and more [23, 24, 25]. Conducting tests using the Internet has many advantages [26].

Valova conducted a study on the *impact of Facebook on the educational process and student outcomes*. The authors believe that, overall, Facebook has a positive impact on learners, and the main disadvantage for educators is that they have to publish educational materials on Facebook and follow discussions [27].

Another opinion was presented in [28]. According to the authors, *modern trainees are a victim of social networks and*

media, which have a huge and often negative impact on their lives. The study outlines some negative aspects of using social networks and media. In the first place is *the lack of mentoring*. The study sought to determine whether students' intellectual and emotional coefficients (IQ & EQ) were reduced or impaired and whether their ability to think independently was impaired. The study concluded that *the scientific and effective mentoring has a positive impact on student behavior*, *attendance of students and their behavior*. The author outlines steps to improve the quality of training and reduce the negative impact of social networks and media. Such studies confirm the relevance of the topic of the impact of social media on learners and indicate methods and ways for their proper use.

Internet and electronic resources transformed the library system and the way we look at the sources of information [29]. Most of the computer training programs, electronic textbooks and educational resources are free and easily accessible to all and from anywhere in the world. Social media allows them to be easily shared and commented. Generally, however, *accidental use of electronic sources is not beneficial. Trainees spend a lot of time searching for reliable information and find it difficult to reach credible sources themselves*. Formal training with the help of a teacher usually results in much better results.

Social networks connect people. But no matter it seems that students are connected with the world, they actually lose something really important - human relationship. Donna Pisacano Brown defines human communication as an energy exchange between people who pay attention to one another. It has the power to deepen the moment, inspire, change and build confidence [30]. When we communicate, we also bring in certain emotions. Though, mental processes also depend on emotions. Besides, John Dewey is really up-to-date today, as he is writing about the need to pay attention to the emotions of students in education: ... *there is no education when ideas and knowledge do not turn into emotion, interest and will* [31]. What is the effect of the emotional impact of trainees is as important as the emotional behavior of teachers themselves. That is why *face-to-face communication is extremely important for the educational process.*

The relationship between a teacher and a learner, and the good relations between them are extremely important for the learning environment. They support positivism, achieving a positive attitude and have a huge impact on the learning process. The relationship between the teacher and the learner has changed over the years. From a complete authority as a person, who knows everything, and imposes it with no need to ask questions until nowadays, when the teacher functions primarily as a mentor. *The "teacher-learner" relationship can have a positive impact*

not only on the cognitive and personal development of learners but also on their motivation for learning and academic excellence [32]. According to Kiradzhieva, the good relations between teacher-student, are associated with increased motivation for learning and achievement in students as well as a growing professional commitment and personal satisfaction among teachers. *Successful teachers are those who have the capacity to maximize the learning potential of all their students*. However, this is hard to achieve by relying primarily on social media.

4. MENTAL HEALTH ISSUES

Alongside health problems caused by excessive or improper use of electronic devices, for example vision and sleep disorders, road accidents, bacteria spread, increased likelihood of tumors, etc. [33], *social media lead as well to problems associated with mental health*. We believe that the most serious of these is *social media addiction*. It is closely associated with Internet addiction, the widespread use of mobile devices by students, the increase in service advertised on social media including the ability to earn money. Although this kind of addiction is not categorized as a mental disorder, many researchers now use the term "Facebook addiction disorder" in their publications [34].

In the publication of Nazir [35], he stated that there is an immediate *connection between students' addiction to social media and their confidence and satisfaction in life*. The results show that addictive use of social media is inversely proportional to self-esteem, and social media in turn promotes greater life satisfaction. A study conducted in Taiwan with 500 students revealed and the relationship between Internet addiction and Borderline personality disorder [36].

Studies also show that *social media addiction has a negative effect on students' academic achievement* [37]. Poor performance can easily be explained by reducing the time for learning in comparison to the increasing the time spent on social media, sharing web resources and digital learning materials of poor quality, or neglecting the educational process.

The intensive use of social media also has a negative impact on the age group between 16 and 34 [38]. They are malleable and suffer from the *phenomena such as "Fear of missing out" and "Fear of better options"*. In a study of Polygeia [39] the issue of *mental health and its connection of the options to manipulate the images before sharing* is being discussed. For example, the so-called fitspiration images are often manipulated and can lead to anxiety, sadness, or depression for young girls who are very critical to their bodies.

There are also other concerns about potentially bad influence on students. Inaccurate or manipulated information can spread in a very short time around the world and adversely affect people's perceptions and opinions [40]. There are many Influencers, which stimulate the positive development of students, but there are still others, who spread malicious ideas. *As a result of this harmful influence, students may begin to accept poor academic results, drinking alcohol, having drug addiction, be violent, have risky sexual contacts, immobilization, and commercialization as something normal.*

Last but not least, *stress, anxiety, low self-esteem, etc. can also be triggered by negative comments on posts, low shares or view, multiple "dislikes", and others.* Both students, faculty and administrative staff may be affected.

5. CONCLUSION

Young people's desire for personal expression, constant communication with friends, and rapid share of knowledge and impressions are among the main reasons for the quick development of social media. And where are the trainees? In social media, of course! They read, write, share opinions, like, comment, communicate, study, shop, watch movies, matches, news, etc.

When a teacher wants to get in touch with his students quickly and easily, they can do so with the help of social media. That is why more and more teachers are exporting various educational activities and teaching resources to social media.

Is it a good idea to use social media in training? Is it worth going beyond the secure platform of a learning management system? Two questions that each teacher must find his own answer to.

However, it is undoubted that the use of social media in training has its risks and consequences. And they are many - studying bad quality content, plagiarism, identity theft, compromising authority in the web, social engineering and manipulation, social media addiction, mental health threats, and more. Knowing these risks is good prevention and by informing the trainees, we protect ourselves too!

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