

# Survey on Social Media Content and Analyzing Student's Learning Experiences

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**Abstract:** *Micro blogging is a popular technology in social networking applications that lets users publishes online short text messages in real time via web, SMS, etc. Social media is used for social interaction among people in which they share or exchange information, ideas and everyday encounters in an informal and casual manner in virtual communities. The rapid growth in popularity of social media has permitted large number of users to exchange their ideas, create and share content, give and receive recommendations. However analyzing such large amount of social media is an open challenging problem. In this study the use of social media content for detecting various events, analyzing student behavior about learning and the performance of a student in an education, detecting the popularity of Twitter message etc. is discussed.*

**Keywords:** Social media, web text analysis, education

## 1. Introduction

Now a day's everyone is using social media (e.g.facebook, twitter etc.) for making communication with each other. Among these social media sites Twitter is one of the micro blogging sites where users can post their thoughts, feelings, ideas and events which are happening around them such as fire, traffic jam, heavy rainfall, and earthquakes and their opinion about those events without any hesitation. Twitter is a micro blogging site tweets of which are fewer than 140 characters. Twitter tweet i.e. status update message often used as a message to friends. A user can follow other users and their followers can read their tweets. One important characteristic about micro blogging services is its real-time nature. Although blog users typically updates their blogs once in several days, but Twitter user writes several tweets per day. Users are interested to know about each other's personal life and thinking via these social sites.

The retention of students in engineering colleges is an issue of current concern, since engineering graduates provide a high percentage of tomorrow's technical workforce. The retention is important and it should be used as a college outcomes assessment parameter. Although recruitment remains fundamental in today's educational environment, students' retention is becoming increasingly important. In addition, if students are not successful in completing their degrees, there can be serious institutional consequences. For example, student attrition raises questions about the institutional priorities, particularly those of teaching and student development. In recent years, retention rates have been cited as per one of the censorious surveys of institutional effectiveness.

Now a day's student uses micro blogging sites such as Twitter, Face book etc. to share their issues and problems in engineering life. The students are feeling free to post their thoughts and ideas on such sites. Their behavior is like back-stage i.e. they share what they actually feel and think. For understanding deeper knowledge about education system and

actual problems in learning, these micro blogging sites are very useful.

## 2. Related Work

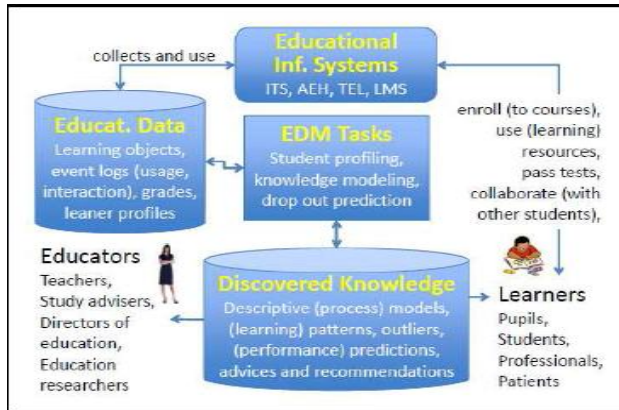
1] The Goffman's [1] has stated the theoretical foundation of social performance from the informal conversation of data on the web. This theory is widely used to describe the mediate interaction and details on the web today. The main aspect of this theory is the actual difference between front stage and back stage performance of the people on the social media sites. As compared with front stage the back stage behavior of the student is more luxuriate and that usually encourages the people for more spontaneous actions and they are posting what they feel and think. Students also discuss their thoughts and what they feel about learning on social media sites .Their behavior is more relaxing than the formal classroom setting.

Many studies show that social media users deliberately handle their online identity to "look better" than in real life. Other studies show that there is a lack of awareness about managing online identity among college students, and that young people usually regard social media as their private space to hang out with peers outside the sight of parents and teachers.

Many methods have been developed to mine sentiment from texts. Our purpose is to achieve deeper and finer understanding of student's experiences especially their learning-related problems and their concerns. To determine what student's problems a tweet indicates is a more complex task than to determine the sentiment of a tweet even for a human judge. Therefore, our study requires a qualitative analysis.

2] G.Siemens et al [2] has proposed learning analytics and educational data mining (EDM) which are data-driven approaches emerging in education. These approaches scrutinize the data generated in educational settings to understand students and their learning environments in order to inform educational researchers and decision-makers. EDM

describes a research field concerned with the application of data mining, machine learning and statistics to information generated from educational settings (e.g., universities and intelligent tutoring systems). The objective is to find the problems being faced by students in their education and improve the student success and retention. First data scrutinize, using these approach typically are structured data including administrative data, students activity and performance data from CMS (Course Management System).



**Figure 1:** Educational Data Mining in a Nutshell [6](Calders and Pechenzikiy, 2012)

The above figure describes the various members in the EDM domain and each of the above users can benefit in different ways from EDM. For instance, the learners can receive opinion and recommendations about resources and tasks that are most suitable with respect to their current knowledge and learning objectives, educators can evaluate student performance and the effectiveness of provided study material, study adviser can identify the issues, risk and various bottlenecks in the current curriculum.

**Advantages:**

This study is useful for improving the quality of education by analyzing the structured data generated from classroom activities and CMS.

**Disadvantages:**

They have only considered the data generated from course management system and formal classroom setting. However students are making more spontaneous action on the social media sites for posting their thoughts, ideas and their feelings etc. without any hesitation.

3] K.E.Arnold et al [3] Present course signal as a student success system that allows faculty to provide meaningful feedback to student based on predictive models. This predictive student success algorithm is run on-demand by instructors. This works by mining data from multiple university sources and subsequently transforms the data into a generated risk level with supporting information for each student.

The algorithm that predicts student risk status has following components:

1. Performance: Measured by percentage of points earned in course to date.
2. Efforts: Interaction with Blackboard vista.

3. Prior academic history: Academic preparation, high school GPA and standardized test score.

Based on results of the SSA, a red, yellow or green signal is displayed on a student’s course homepage. A red indicates high likelihood of being unsuccessful; yellow indicates potential issue of succeeding and green indicate high likelihood of succeeding in the course.

**Advantages:**

- This is used for improving the student retention and success.
- It can be used for sharing faculty and student perception.

4] A.Go et.al [4] proposed a framework which is useful for classifying the sentiment of Twitter message using distant supervision by using machine learning algorithms. This is useful for consumers who want to research the sentiment of product before purchase or companies that want to monitor the public sentiment of their products. The machine learning algorithms such as Naïve Bayes, Maximum entropy or SVM are used for sentiment classification.

**Advantages:**

- This is useful for consumers for analyzing the sentiment of a product before purchase.
- Companies can also monitor the public sentiment of their products or brands.

**Disadvantages:**

- Neutral tweets are not processed.
- It only handles English sentences but Twitter has many international users also.

5] T.Sakaki et al [5] works on real-time event detection by observing the tweets from social sensors (i.e. Twitter users). It detects the real time event such as earthquakes by using classifier of tweets based on features such as the keywords in tweets, the number of words and their context. Semantic analysis is used for classifying the tweets into positive (related to earthquake) and negative classes by using SVM. As the location is very important for the real time event detection so by using Kalmal filtering and Particle filtering the location of target event is detected.

**Advantages:**

- It is useful for real time event detection i.e. Earthquake detection and it promptly sends emails to the registered users. This is faster than the announcement that is broadcast by the Japan meteorological Agency.

**Disadvantages:**

- Other events such as traffic jams, accidents and rainbows may not hold by social sensors.
- They have not considered two or more earthquakes or typhoons that may happen simultaneously.

**3. Conclusion**

In this survey, we have studied various methods for analyzing students’ behaviour and evaluating their educational

performance. Also the use of social media contents (i.e. tweets) for detecting various events and analyzing the sentiment of the products and brands.

## References

- [1] E. Goffman's The Presentation of Self in Everyday Life. Lightning Source Inc., 1959.
- [2] G. Siemens and P. Long, "Penetrating the Fog: Analytics in Learning and Education," *Educause Rev.*, vol. 46, no. 5, pp. 30-32, 2011.
- [3] K.E. Arnold and M.D. Pistilli, "Course Signals at Purdue: Using Learning Analytics to Increase Student Success," *Proc. Second Int'l Conf. Learning Analytics and Knowledge*, pp. 267-270, 2012.
- [4] A. Go, R. Bhayani, and L. Huang, "Twitter Sentiment Classification Using Distant Supervision," *CS224N Project Report*, Stanford pp. 1-12, 2009.
- [5] T. Sakaki, M. Okazaki, and Y. Matsuo, "Earthquake Shakes Twitter Users: Real-Time Event Detection by Social Sensors," *Proc. 19th Int'l Conf. World Wide Web*, pp. 851-860, 2010.
- [6] Calders, T., Pechenizkiy, M. "Introduction to The Special Section on Educational Data Mining", *ACM SIGKDD Explorations Newsletter*, 2012

## Author Profile

**Ms. Priyanka P. Lokhande** received the Bachelor degree (B.E.) in Computer engineering in 2013 from Maharashtra Institute of Technology, Kothrud, Pune University. Currently, she is pursuing Master's degree in Computer Engineering at Vidya Pratishthan's College of Engineering, Baramatis, Pune University. Her current research interests include Data Mining.