Chapter 89
Behaviour and Emotions of Working Professionals Towards Online Learning Systems: Sentiment Analysis

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ABSTRACT

Student behaviour in the classroom depends on various influential factors (such as family, friends, locality, habits, etc.). Once a student enters into professional life after completing the graduation, it finds it difficult to get back to the learning process due to a variety of issues. In such situations, most of the students go for online courses to improve their skills or to get a promotion at work by upgrading their academic degrees. The tendency of working professionals attending online classes is increasing rapidly due to the vast development in technology in recent times and due to the demand for innovative Secunderabad, e technologies. In this paper, a detailed study on a variety of participants from different work domains was carried out to study the sentiments of working professionals by analysing their behaviour and emotions using Hadoop, big data, and R-Language. Using the RFacebook API, the functioning of the students was analysed in this work by using R programming. Results have shown that the behaviour of 89% working professionals is positive, and emotionally, 75% were satisfied with online courses. However, the tendency of being lazy was also expressed by many for online courses.

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1. INTRODUCTION

Student learning system (SLS) is changing with time and innovation for a good reason to adopt the best suitable provisions for the students to address the real-time challenges. With the changing systems and applications developed based on computers and mobiles with the support of internet connectivity, it becomes a great challenge for educational institutions. These challenges include the student behaviour in the classroom, overlooking the teaching staff with limited experience and exposure, underestimating the importance of book reading, undermining the traditional teaching methodologies, etc. Such a kind of behavioural changes in the student community demands careful monitoring towards their attitude for learning in the classroom, methods they follow while learning online using web applications on their computers and mobile phones at home, etc. In the recent times, various programs by professors from IIT's, NIT's are available online by centre for the development of advanced computing (C-DAC), national program on technology enhanced learning (NPTEL), etc. providing various certification courses are funded by HRD Ministry, Government of India. Such initiations are made by various governments globally, nationally and regionally to ensure that the youngsters are well trained to suit and fulfil the requirements of the industry to sustain with the daily life challenges in the technological world.

1.1. Recent Work on Sentiment Analysis

In recent times, the purpose of monitoring student performance was obtained by using educational data mining (EDM) by taking the feedbacks and by analyzing student behaviour and sentiments (Altrabsheh et al., 2013). The feedback systems in the educational institutions included response systems, short message services (SMS), and different types of mobile applications, according to Altrabshesh et al. using data mining. Later Altrabshesh et al., experimented with predicting the emotions related to learning by taking feedback via Twitter. The purpose of this experiment is to understand the individual student behaviour using Twitter as compared to the feedback given by students in groups (Altrabsheh et al., 2015). Such an investigation revealed that the emotions of the students are different when they are giving feedback individually and when they are in groups. Apart from Twitter, in an experiment with another popular social network site (SNS), Facebook (FB) was considered by Zamani et al. to determine the sentimental analysis for the emotions of the people (Zamani et al., 2013). In this work, the authors tried to extract both English and Malay words from FB and experimented to find opinion mining and sentimental analysis. Similar work was carried out by Teja et al. movie reviews using machine learning algorithms (Teja et al., 2018). This study helped most of the administrators to keep track of events in their employee's life, which may influence the workplace.

However, these behavioral changes depending on the gender, student level, and their approach to using mobile phones were critically analyzed by Abdulsalami et al. by using four lexical resources (Abdulsalami et al., 2017). The results from this work revealed that the student sentiments are always influenced based on their association with different groups and people in their real lives. In a critical method, Jo et al. built a sentiment analysis model using deep Convolutional Neural Network (CNN) algorithms (Jo et al., 2017), and later experiments are carried out with different psychological measurements (Sharma, 2017). Using the movie review data, the models were trained with the summaries as a part of the concept of transfer learning. The results of this experiment revealed that some of the sentiments were appropriately analysed but could not relate most of the psychological measurements (Bhattacharya et al., 2020; Gadekallu et al., 2020; Reddy et al., 2020).