International Journal of Data Warehousing and Mining
Volume 16 • Issue 2 • April-June 2020

Design of College English Process Evaluation System Based on Data Mining Technology and Internet of Things

Hongli Lou, Henan Polytechnic University, Jiaozuo, China

ABSTRACT

This article proposes a new idea for the current situation of procedural evaluation of college English based on Internet of Things. The Internet of Things is used to obtain the intelligent data to enhance the teaching flexibility. The data generated during the process of procedural evaluation is carefully analyzed through data mining to infer whether the teacher's procedural evaluation in English teaching can be satisfied.

KEYWORDS

College English Teaching, Data Mining, Internet of Things, Process Evaluation, System Design

INTRODUCTION

The procedural evaluation was first proposed in the United States in 1967 (Chakraborty & Sahu, 2014), when the philosopher Scrivan proposed the reform and development of the classroom. The procedural evaluation requires that educators should not only stop at the summative evaluation brought by the achievements but should regard the evaluation as a continuous and comprehensive scientific system (Weaver et al., 2015). The UK evaluation research team ARG found that for students with unsatisfactory academic performance, the infinitely repeated examinations did not improve their enthusiasm for learning, but instead spurred their self-motivation and self-respect. A paper grade does not really reflect the specific situation of the students. For example, some students, who have been studying hard and hard at the same time, have been characterized as poor students because of their unsatisfactory test results. This means negating them. All the efforts made in the process of learning have made them weak and ruined, and thus evolved into a real poor student, which greatly opened the gap between students and top students. Therefore, the use of examination as the decaying way to evaluate the final result of students is obviously not in line with the current development trend in the field of education, and the use of process evaluation is the wise choice (Buczak & Guven, 2016).

In the college English teaching in China, the process evaluation after the new curriculum reform has been applied to the classroom teaching of college English by colleges and universities across the country (Tsai et al., 2014). The use of procedural evaluation can obviously improve student interest and enthusiasm for foreign language learning. In general, through process evaluation, teachers can understand the specific situation of student learning more accurately, truthfully and comprehensively,

DOI: 10.4018/IJDWM.2020040102

Copyright © 2020, IGI Global. Copying or distributing in print or electronic forms without written permission of IGI Global is prohibited.

and make targeted teaching programs in time to improve student learning ability. The advantages of the procedural evaluation method can be seen (Garg, 2019).

RELATED WORK

The ingeniously designed wireless sensor network experiment makes the scientific concepts in the classroom more realistic and easier for students to grasp (Shabestari, 2019). For example, Dressel University has developed a modular wireless sensor network experimental platform and applied it to the teaching of signal processing, computer vision, detection and estimation, pattern recognition and other courses. Through innovative hands-on experiments, the theoretical concepts in the course are realized, and the abstract concepts are linked to the actual life situation, so that interesting and effective teaching and learning can be achieved (Mirzapour, 2019). At the same time, it also stimulates students to have a great interest in the subject. The introduction of wireless sensor network technology can make the traditional interactive display teaching simpler and effective and make it easier to create an inquiry-based classroom atmosphere (Wu et al., 2018).

Data mining, a very important method in modern data processing (Zhang et al., 2018). Data mining technology can summarize and analyze data from a large number of intricate data, extract and transform data, and explore the hidden logic rules and relationships, which provides useful help for our research on the overall situation of the group and promotes the final decision. The most reasonable and objective choice (Wu et al., 2017). This is a deep analysis method of data information, and it is undoubtedly the icing on the cake to apply it to the university English process evaluation system. It can comprehensively and deeply analyze the results of process evaluation and its inherent relationship hidden in various factors, thus perfecting the process evaluation system and making the application process of the whole process evaluation more scientific and objective (Wang et al., 2019). This paper introduces data mining technology and process evaluation methods, and deeply analyzes its application in teaching. Combined with practical experience, it designs a set of process evaluation system suitable for college English teaching.

The rest of this paper is organized as follows. Section 2 discusses data mining technology, followed by application of process evaluation system in teaching designed in Section 3. Design and simulation of college English process evaluation system based on data mining are discussed in Section 4. Section 5 concludes the paper with summary and future research directions.

DATA MINING TECHNOLOGY

Data mining is the process of extracting information and knowledge hidden in it from a large number of incomplete, noisy, fuzzy, and random data that is not known beforehand, but is potentially useful. Data mining should be more accurately named "mining knowledge from data." There are many terms similar to the term, such as knowledge discovery, data analysis, data fusion, and decision support. The field of artificial intelligence is accustomed to knowledge discovery, and the database domain is accustomed to calling it data mining. Data mining objects are mainly relational databases. They are structured data. With the development of technology, data mining objects are gradually expanded to semi-structured or unstructured data, including text, images, video and Web data. In general, data mining is a process of building models and discovering relationships between large-scale, massive amounts of data using a variety of analytical and analytical tools that can be used to make decisions and forecasts. Supporting large-scale data analysis methods and processes, selecting or establishing a data environment suitable for data mining applications is an important topic in data mining research. Figure 1 shows the basic process of a data mining.

The functions of data mining include: correlation analysis, time series mode, clustering, classification, deviation detection and prediction. The realization of these functions depends on the

14 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/article/design-of-college-english-process-evaluation-system-based-on-data-mining-technology-and-internet-of-things/247918

Related Content

Mining Integrated Sequential Patterns From Multiple Databases
Christie I. Ezeife, Vignesh Aravindanand Ritu Chaturvedi (2020). *International Journal of Data Warehousing and Mining (pp. 1-21).*
www.irma-international.org/article/mining-integrated-sequential-patterns-from-multiple-databases/243411

Mining Profiles and Definitions with Natural Language Processing
Horacio Saggion (2008). *Emerging Technologies of Text Mining: Techniques and Applications (pp. 77-98).*
www.irma-international.org/chapter/mining-profiles-definitions-natural-language/10177

Sentiment Analysis of Tweets on the COVID-19 Pandemic Using Machine Learning Techniques
Jothikumar R., Vijay Anand R., Visu P., Kumar R., Susi S.and Kumar K. R. (2022). *Research Anthology on Implementing Sentiment Analysis Across Multiple Disciplines (pp. 1750-1760).*
www.irma-international.org/chapter/sentiment-analysis-of-tweets-on-the-covid-19-pandemic-using-machine-learning-techniques/308573

Mining the Edublogosphere to Enhance Teacher Professional Development
Eric Poitrasand Negar Fazeli (2017). *Social Media Data Extraction and Content Analysis (pp. 42-65).*
www.irma-international.org/chapter/mining-the-edublogosphere-to-enhance-teacher-professional-development/161958

Efficient Algorithms for Dynamic Incomplete Decision Systems
Nguyen Truong Thang, Giang Long Nguyen, Hoang Viet Long, Nguyen Anh Tuan, Tuan Manh Tranand Ngo Duy Tan (2021). *International Journal of Data Warehousing and Mining (pp. 44-67).*
www.irma-international.org/article/efficient-algorithms-for-dynamic-incomplete-decision-systems/286615