Data in Brief ∎ (∎∎∎∎) ∎∎∎–∎∎∎

Contents lists available at ScienceDirect

Data in Brief

journal homepage: www.elsevier.com/locate/dib

Data Article

Learning analytics for smart campus: Data on academic performances of engineering undergraduates in a Nigerian private university

Segun I. Popoola [a,*], Aderemi A. Atayero [a], Joke A. Badejo [a], Temitope M. John [a], Jonathan A. Odukoya [b], David O. Omole [c]

[a] Department of Electrical and Information Engineering, Covenant University, Ota, Nigeria
[b] Department of Psychology, Covenant University, Ota, Nigeria
[c] Department of Civil Engineering, Covenant University, Ota, Nigeria

ARTICLE INFO

Article history:
Received 12 December 2017
Accepted 28 December 2017

Keywords:
Smart campus
Learning analytics
Sustainable education
Nigerian university
Education data mining
Engineering

ABSTRACT

Empirical measurement, monitoring, analysis, and reporting of learning outcomes in higher institutions of developing countries may lead to sustainable education in the region. In this data article, data about the academic performances of undergraduates that studied engineering programs at Covenant University, Nigeria are presented and analyzed. A total population sample of 1841 undergraduates that studied Chemical Engineering (CHE), Civil Engineering (CVE), Computer Engineering (CEN), Electrical and Electronics Engineering (EEE), Information and Communication Engineering (ICE), Mechanical Engineering (MEE), and Petroleum Engineering (PET) within the year range of 2002–2014 are randomly selected. For the five-year study period of engineering program, Grade Point Average (GPA) and its cumulative value of each of the sample were obtained from the Department of Student Records and Academic Affairs. In order to encourage evidence-based research in learning analytics, detailed datasets are made publicly available in a Microsoft Excel spreadsheet file attached to this article. Descriptive statistics and frequency distributions of the academic performance data are presented in tables and graphs for easy data interpretations. In addition, one-way Analysis of Variance (ANOVA) and multiple comparison post-hoc tests are performed to determine whether the variations in the academic performances are significant across the seven

* Corresponding author.
E-mail addresses: segun.popoola@covenantuniversity.edu.ng, segunpopoola15@gmail.com (S.I. Popoola).

https://doi.org/10.1016/j.dib.2017.12.059

engineering programs. The data provided in this article will assist the global educational research community and regional policy makers to understand and optimize the learning environment towards the realization of smart campuses and sustainable education.

Specifications Table

Subject area	*Engineering Education*
More specific subject area	*Learning Analytics*
Type of data	*Tables, graphs, figures, and spreadsheet file*
How data was acquired	*For the five-year study period of engineering program, Grade Point Average (GPA) and its cumulative value of each of the sample were obtained from the Department of Student Records and Academic Affairs.*
Data format	*Raw, analyzed*
Experimental factors	*Undergraduates with incomplete academic records were excluded*
Experimental features	*Descriptive statistics, frequency distributions, one-way ANOVA and multiple comparison post-hoc tests were performed to determine whether the variations in the academic performances are significant across the seven engineering programs.*
Data source location	*The population sample and the academic performance data provided in this article were obtained at Covenant University, Canaanland, Ota, Nigeria (Latitude 6.6718° N, Longitude 3.1581° E)*
Data accessibility	*In order to encourage evidence-based research in learning analytics, detailed datasets are made publicly available in a Microsoft Excel spreadsheet file attached to this article.*

Value of the data

- Comprehensive academic performance datasets provided in this article will promote evidence-based research in the emerging field of learning analytics in developing countries [1–4].
- Easy access to this data will assist the global educational research community and regional policy makers to understand and optimize the learning environment towards the realization of smart campuses and sustainable education [5–10].
- With the growing adoption of machine learning and artificial intelligence techniques in different fields, empirical data provided in this article will help in the development of predictive models for learning outcomes in engineering undergraduates [11–18].
- Descriptive statistics, frequency distributions, one-way ANOVA and multiple comparison post-hoc tests that are presented in tables, plots, and graphs will make data interpretation much easier for useful insights and logical conclusions.
- Detailed datasets that are made publicly available in a Microsoft Excel spreadsheet file attached to this article will encourage further explorative studies in this field of research.

1. Data

The emerging field of learning analytics may be exploited to improve learning outcomes of engineering undergraduates in higher institutions of developing countries towards attaining

Please cite this article as: S.I. Popoola, et al., Learning analytics for smart campus: Data on academic performances of engineering undergraduates in a Nigerian private university, Data in Brief (2018), https://doi.org/10.1016/j.dib.2017.12.059