



ELSEVIER

Contents lists available at [ScienceDirect](http://ScienceDirect.com)

## Data in Brief

journal homepage: [www.elsevier.com/locate/dib](http://www.elsevier.com/locate/dib)

## Data Article

## Data on multicultural education and diagnostic information profiling: Culture, learning styles and creativity



Andino Maselena\*, Glenn Hardaker, Noraisikin Sabani, Nabilah Suhaili

Centre for Lifelong Learning, Universiti Brunei Darussalam, Brunei Darussalam

## ARTICLE INFO

## Article history:

Received 4 October 2016

Received in revised form

2 November 2016

Accepted 8 November 2016

Available online 18 November 2016

## Keywords:

Multicultural education

Diagnostic information profiling

Culture

Learning styles

Creativity

## ABSTRACT

This article contains data related to multicultural education and diagnostic information profiling preliminary findings. It includes the responses of 253 students. The data consists of six sections, i) culture: race, ethnicity, language and identity; ii) learning preferences: physiological and perceptual; iii) cognitive learning styles: physical, emotional and mental; iv) creativity skills and problem solving skills; v) motivation; and vi) students' background knowledge. The data may be used as part of data analytics for specific personalized e-learning platform.

© 2016 The Authors. Published by Elsevier Inc. This is an open access article under the CC BY license

(<http://creativecommons.org/licenses/by/4.0/>).

## Specifications Table

Subject area	Educational technology
More specific subject area	Personalized learning; adaptive learning technology
Type of data	Table
How data was acquired	Questionnaire
Data format	Filtered completed data

\* Corresponding author.

E-mail address: [andimaselena@gmail.com](mailto:andimaselena@gmail.com) (A. Maselena).

<http://dx.doi.org/10.1016/j.dib.2016.11.024>

2352-3409/© 2016 The Authors. Published by Elsevier Inc. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

Experimental factors	There are no pre treatment samples
Experimental features	Experiments involves questionnaires that will be utilized as preliminary findings for diagnostic tool software development
Data source location	United Kingdom
Data accessibility	The data is with this article

---

### Value of the data

---

- The data may be utilized as part of diagnostic tool software testing and development.
  - The data may be utilized as a means to build learner analytics and predictive modeling software.
  - The data may also utilized as a means to build adaptive portfolio for personalized learning.
- 

## 1. Data

The data presented in this article show the responses of 253 Higher Education students completing questionnaire relating to their cultural environment, learning preferences, cognitive learning styles, and creativity. The responses may be used to seek correlation or may be selected based on subsets, identified as personalized parameters.

## 2. Experimental design, materials and methods

The research design of this study was experimental and involves questionnaires that were utilized as preliminary findings for diagnostic tool software development. The question sets consist of six sections which include culture (race, ethnicity, language and identity); learning preferences (physiological and perceptual); cognitive learning styles (physical, emotional and mental); creativity (creativity skills and problem solving skills, motivation, and subject specific knowledge). Culture has become one of the main focuses of this profiling data as it has been found to shape the way students learn [1]. This includes cultures that the students are exposed to, may it of their own and also cross culture, and is found to affect all spheres of life, including their personality and cognitions and including their own learning [1–3]. Learning preferences identify the student's learning preference in

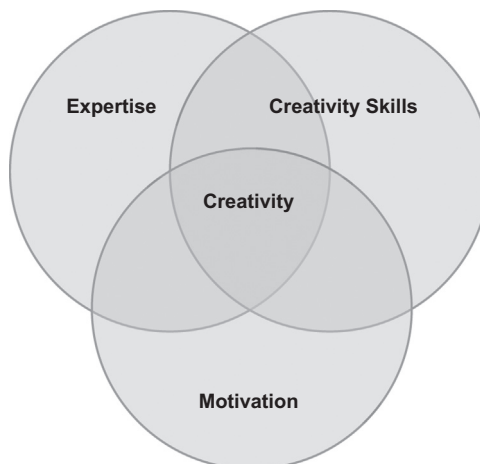


Fig. 1. Component model of creativity (Adapted from Amabile [7]).

the context of ‘Visual’, ‘Auditory’ or ‘Kinaesthetic’ learner. The results from this section are able to integrate into Virtual Learner Management Systems to support adaptive content and associated learning. Cognitive styles is closely associated with personality traits [4]. Cognitive styles is associated with how a student organizes and processes data that has particular meaning for them [5]. It is important to analyze cognitive styles to facilitate an understanding of the various psychological and physical behaviors of an individual student [6]. The last section of the assessment concentrates on the user’s creativity levels. Research suggests [7] that creativity will most likely occur when the three elements of expertise, task motivation and creative thinking overlap. Fig. 1 shows component model of creativity.

We can therefore assume that maximum creativity is achieved at the central point where the three circles overlap equally. If we place an equilateral triangle over this point so that its corners are touching the outer points of the circles (see Fig. 2), we can measure a line from each corner to the centre. If we represent the line as a “ratio” scale then we can measure and plot each factor (Fig. 3). When the 3 scores for each factor are plotted, a new triangle is drawn within the main one. As an “ideal”, a person can be considered “most creative” when their scores result in a balanced smaller equilateral triangle (Fig. 4) in the centre while a less-creative person will have an unbalanced, significantly larger acute or obtuse triangle (Fig. 5).

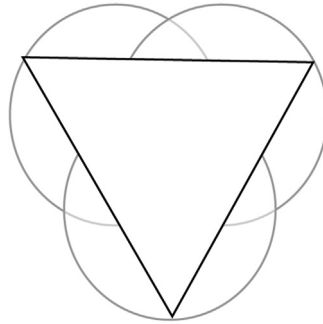


Fig. 2. Overlay triangle.

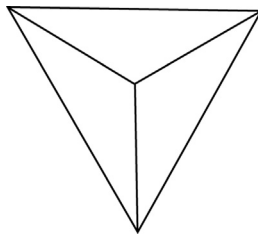


Fig. 3. Devising scale of measurement.

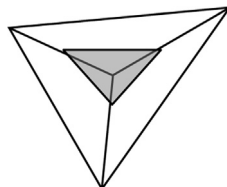
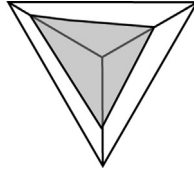


Fig. 4. Creative user.



**Fig. 5.** Non-creative user.

Applying such a theoretical perspective requires each of the parts of “understanding your creativity” to be measurable along the same “ratio” scale.

### **Acknowledgements**

This work is supported by Brunei Research Council (BRC), Brunei Darussalam, reference: JPM/PE/SUT/BRC/12. We gratefully appreciate this support.

### **Transparency document. Supporting information**

Transparency data associated with this article can be found in the online version at <http://dx.doi.org/10.1016/j.dib.2016.11.024>.

### **Appendix A. Supporting information**

Supplementary data associated with this article can be found in the online version at <http://dx.doi.org/10.1016/j.dib.2016.11.024>.

### **References**

- [1] K. Keith, Culture and teaching, in: J.E. Groccia, M.A.T. Alsudairi, W. Buskist (Eds.), *Handbook of College and University Teaching: A Global Perspective*, Sage, Los Angeles, 2012.
- [2] R. Brislin, *Understanding Culture's Influence on Behaviour*, Fox Worth, Texas: Harcourt, 2000.
- [3] H.C. Triandis, R.W. Brislin, Cross cultural psychology, *Am. Psychol.* 39 (1984) 1006–1016.
- [4] G. Hardaker, A. Sabki, R. Dockery, Cognitive learning styles and digital equity: searching for the middle way, *Int. J. Incl. Educ.* 14 (8) (2010) 777–794.
- [5] S. Messick, The nature of cognitive styles: problems and promise in educational practice, *Educ. Psychol.* 19 (1984) 59–74.
- [6] M. Waring, C. Evans, *Understanding pedagogy: developing a critical approach to teaching and learning*, Routledge, UK, 2014.
- [7] T.M. Amabile, Motivating creativity in organizations: on doing what you love and loving what you do, *Calif. Manag. Rev.* 40 (1997) 39–58.