Analysis of the Perception of Students about Biometric Identification

Francisco D. Guillén-Gámez, Open University of Madrid (UDIMA), Madrid, Spain
Iván García-Magariño, University of Zaragoza, Zaragoza, Spain
Sonia J. Romero, Open University of Madrid (UDIMA), Madrid, Spain

ABSTRACT

Currently, there is a demand within distance education of control mechanisms for verifying the identity of students when conducting activities within virtual classrooms. Biometric authentication is one of the tools to meet this demand and prevent fraud. In this line of research, the present work is aimed at analyzing the perceptions of a group of distance students on the impact on the teaching-learning process of a technology of biometric authentication called Smowl. To meet this objective the authors design a quasi-experimental study with two groups of 50 students, one using Smowl technology and the other not. The results show a comparison of the perceptions of both groups, finding that students who have used Smowl are more favorable towards the use of such tools, except in matters relating to the impact on academic performance and ethical aspects of its use, in which no significant differences were found.

Keywords: Analysis of Perceptions, Biometrical Recognition, E-Learning, Facial Authentication, Online Learning

INTRODUCTION

In recent years, universities have increased considerably the insertion of technologies in classrooms enhancing equipment, infrastructures, software and so on (Kirkwood & Price, 2005). These technologies are transforming traditional teaching into a new model called distance education or e-learning (Rosenberg, 2001).

E-learning is the use of technology that integrates a set of tools for teaching
and learning, permitting non-face teaching (e-learning) and/or blended learning (b-learning), which combines online education and face-to-face classroom experiences (Browne, Jenkins & Walker, 2006). The main objective of e-learning platform is to enable the creation and management of teaching and learning areas on the Internet where educators and pupils can cooperate during their academic training. The teaching and learning process alludes to the whole education process where students acquire one or several skills (Garrison & Archer, 2000).

Distance universities should offer education as acceptable and recognized as the traditional one. Therefore, one of the missions of e-learning universities is to try to avoid student fraud while they are doing their activities through LMSs such as Moodle (Dougiamas & Taylor, 2003). Martín-Blas & Serrano-Fernández (2009) state Moodle is a virtual school where teachers and students join together for the development of online courses. In addition, the use of Moodle owes to the fact of being one of the most used platforms in universities in order to encourage the interaction between teachers and students (Çelik, 2010).

Currently, the control on how students realized their tasks in distance education was not doable in distance universities due to the absence of software that could monitor and verify students. Thanks to biometrics, facial authentication specifically, a possibility appears to check the lack of scam while students do their assignments in Moodle.

Jain & Flynn (2008) indicate that biometrics is a method used for recognizing people depending on physiological or behavioral features. There are different typologies within biometrics, such as digital fingerprints, iris scan, voice recognition and facial authentication (García-Hernández & Paredes, 2005). Each of the previous techniques has certain comparative advantages and disadvantages, which should take into consideration when selecting a technique for a specific application. Table 1 shows these advantages and downsides.

However, through facial authentication (Farshchi & Toosizadeh, 2011), it

<table>
<thead>
<tr>
<th>Technique</th>
<th>Advantages</th>
<th>Disadvantages</th>
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<tbody>
<tr>
<td>Facial recognition</td>
<td>Sample taking with any physical contact.</td>
<td>Slowness during image processing.</td>
</tr>
<tr>
<td>Digital fingerprints</td>
<td>Prompt search among thousands of fingerprints.</td>
<td>Slowness during sample taking.</td>
</tr>
<tr>
<td>Hand geometry</td>
<td>Difficult to forge a hand and speed search</td>
<td>Slowness during sample taking.</td>
</tr>
<tr>
<td>Iris</td>
<td>Close approximation to recognition.</td>
<td>Intrusion in the eye.</td>
</tr>
<tr>
<td>Voice</td>
<td>It has a slightly high cost.</td>
<td>Failures in noisy surroundings.</td>
</tr>
<tr>
<td>Signature</td>
<td>It has a slightly high cost.</td>
<td>Candidate psychological state can alter the sample.</td>
</tr>
</tbody>
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