**PAPER PRESENTATION**
**Bias factors related to math test performance of Ethiopian students in Israel**

Michal Levi- Keren, Tel Aviv University, Kibbutzim College of Education, Israel

The present study examines bias factors which might grant a relative advantage to native Israelis over groups of immigrants in a mathematics achievement test administered to fifth grade students. The bias factor analysis process, aided by quantitative and qualitative data gathering methods, comprised three phases: (1) Using a psychometric procedure called DIF (Differential Item Functioning) to identify differential functioning in test items. DIF was examined in two differentiated groups of immigrants from the FSU and Ethiopia, which were compared to a group of native Israelis with the same ability level in the construct which the test aimed at measuring. (2) Identifying the sources of difficulty leading to DIF, while distinguishing between difficulties that are relevant to the construct measured in the test ("impact factors"), as opposed to those which are not ("bias factors"). (3) Determining whether the item incorporates bias factors. Phase 1 was based on the analysis of the results of a mathematics achievement test administered to a national, representative sample of native Israeli students and immigrant students from the FSU and from Ethiopia. Phases 2 & 3 were made through the judgment of subject-matter experts of those items found to be having DIF, as well as through interviews with immigrant students and "culture experts", who contributed a cultural perspective to the answers of the interviewees.

The paper focuses on the results related to Ethiopian students, which support Vygotsky's socio-cultural approach, emphasizing the influence of culture on the formation of high mental functions, including mathematical thinking. The practical implications of these results are discussed.

In recent years there has been a significant increase in the number of immigrants in many European countries, as well as in Canada, the US and Australia. Israel has absorbed immigrants from the day of its foundation in 1948, including, since the end of the 1980s, large immigration waves from the Former Soviet Union (FSU) and Ethiopia. Mass immigration, in Israel as abroad, tends to include large numbers of children, who, as they join their new country's education system, are forced to cope with many difficulties. In Israel, as elsewhere, follow-up research has been conducted to accompany these integration processes. Studies concerning the academic achievements of immigrant children paint a complex, multi-dimensional picture. While some indicate that immigrant students' achievements level out and , after years, may even come to exceed those of native students, there are other studies that reveal persistent academic achievement. In Israel, it was reported that the academic achievements of immigrants from the FSU and Ethiopia are lower than those of native Israelis, even long after immigration.

Many studies have tried to uncover the sources of immigrant students' academic difficulties. They pointed at a complex array of student characteristics, on both the individual and group level. These may be demographic: relating to the number of years students have spent in their new country, to the socio-economic status of their families, to their school's socioeconomic composition, etc; other characteristics are culture-dependent and therefore relate to language, ways of thinking and values typical of the students' culture of origin. However, since the findings of these studies are not mutually consistent, it is impossible to generalize about the respective impact of these characteristics. Another important component contributing to immigrant students' academic difficulties, however, has to do with learning conditions, including the use of modes of assessment which were occasionally found to be incompatible with the students' learning needs. The assessment measures used supplied only meager information regarding the knowledge the students acquired in their countries of origin. Even the use of testing accommodations, specially developed to improve assessment validity and thus to help the immigrant students skirt these problems, was not always proven to be effective.

the study can be used in the designing and implementation of gender sensitive ICT policies and gender sensitive innovative educational programmes in the rural and urban areas in Ghana.

**PAPER PRESENTATION**
**Equity and access issues in the educational use of learning management systems (LMS) in a globally networked society**
Ramon Garrote Jurado, University of Boras, Sweden; Michael Christie, Stockholm University, Sweden

In this paper the authors present research findings from a comparative case study involving the pedagogical use of learning management systems (LMS) at the university level. Two engineering programs are compared, one based at the University College, Borås, Sweden (hereafter UB) and the other at the Instituto Superior Politéêcnico Joséê Antonio Echeverrîa, Havana, Cuba (hereafter ISPJAE). At UB twenty two engineering lecturers were surveyed concerning their use of LMS. At ISPJAE fifteen lecturers were given a course on LMS, provided with tools to use it, and subsequently interviewed about the extent to which they had employed it in their courses. The aim of the case study was threefold. Firstly to compare the lecturers' knowledge and understanding of the pedagogical advantages of using LMS in face-to-face, blended and online learning. Secondly to determine the extent to which an LMS was used and evaluate the pedagogical value of such use. Thirdly to investigate the administrative, technological and pedagogical barriers involved in using an LMS.

As the title of the paper suggests the purpose in comparing such disparate groups was to investigate if there were differences in terms of equity and access issues in the use of LMS in higher education. Another aim was to use the case study to better understand some of the assumptions underlying the concept 'education for a globally networked society'.

The paper used case study as its research method and data was gathered by means of surveys, interviews and the analysis of course evaluations. The method was embedded in an action research process. Results from an earlier cycle of the research process have been used to inform and help the participants in their use of LMS. The extent to which this has resulted in a more efficacious use of LMS is still being monitored and the project is now engaged in a third cycle of research. The theoretical basis for the research is Habermas' communicative action theory (Habermas, 1989). This paper makes a theoretical and educational contribution by using the empirical case to illustrate differences in access to an uncensored Internet and the barriers that lecturers from different political, social and economic systems encounter when seeking to use LMS as a pedagogical tool in Higher Education.

The results from the case study indicate that because lecturers at UB were regular users of the Internet they had a more sophisticated knowledge and understanding of the pedagogical potential of LMS. In Cuba lecturers have to ask permission and book time to use the Internet. For economical reasons only 50% of the Cuban participants had a computer at home and none of them had internet access. During brainstorming sessions however it was clear that many of these lecturers had innovative ideas about the use of LMS. Our second aim concerned the use of LMS at both sites. LMS was available to both sets of teachers. The teachers at UB used the 'content' tools available in the LMS in 60% of their courses. They employed the system to create a course structure, publish document files, link to pages on the internet and allow students to download information. Only 21% of their courses made regular use of tools that allowed students to submit assignments online and receive feedback about their results. The use of communicative tools such as chat, asynchronous discussions, email within the system, announcements and calendar varied from 13% to 20% in the courses. At ISPJAE the LMS freeware Moodle was available on the faculty's server for intranet use but none of the teachers had used it prior to March 2010. In that month the first author gave a course on the pedagogical use of LMS and in June 2010 conducted a follow up meeting with the participants. Eight presented their progress and detailed ways in which they used both content and communicative tools Seven could not be present at the presentations but were surveyed later and indicated that they mainly used the content tools available in the LMS. Participants from both UB and ISPJAE perceived that the LMS provided the means to better organise their courses and enable students to obtain course material. Downloading material was much easier for Swedish than Cuban students because the latter have to queue to gain computer access. The teachers were uncertain about the overall pedagogical value of LMS use and this needs further research. In terms of the administrative, technological and pedagogical barriers to LMS use the case study clearly reveals differences between UB and ISPJAE participants. Lack of time was the most common barrier at UB whereas lack of computer hardware, software and bandwidth were restraining factors in Cuba. At UB the lack of time also meant that lecturers were not so willing to change their pedagogical practice unless they could be convinced that using an LMS was both pedagogical and time efficient.

The theoretical and educational significance of this paper is that it provides an actual case that illustrates access and equity issues in education for a globally networked society. Just under 500 million users come from countries that

control Internet content for ideological reasons. In the case of Cuba access itself is controlled. Can we talk about a global network when 1.5 billion people have no electricity (Gronewold, 2009), no digital infrastructure and no public or personal resources to buy computers, mobile devices and bandwidth? Can we talk about a networked society when its 2 billion users come from different countries with very different social, cultural, political and economic systems?

References

Gronewold, N., Scientific American, 24 November 2009  Habermas, J. (1989). The structural transformation of the public sphere: an inquiry into a category of bourgeois society. Cambridge Mass.: MIT Press.

**PAPER PRESENTATION**
**The Relationships Among Personality Traits and Video Game Preferences in Undergraduate Learners**

John Quick, Arizona State University, United States; Robert Atkinson, Arizona State University, United States; Wilhelmina Savenye, Arizona State University, United States; Lijia Lin, Arizona State University, United States

Very little research has been conducted on how personality impacts learner perception and use of video games. This study aims to identify the relationships among undergraduate learners' personality traits and their video game preferences. As of this writing, 164 undergraduate students have completed an online survey representing these aspects. A preliminary factor analysis has identified six categories that explain how and why players engage in gaming activities. A preliminary cluster analysis has identified three major categories of learners based on their game preferences and personality traits: avid gamers, casual gamers, and non-gamers. EARLI attendees will be introduced to the relationships between personality traits and gaming, which are believed to have meaningful implications for the design, use, and research of game-based educational technologies.

Introduction

Personality is instrumental in the way that a person perceives of and interacts with the world. Therefore, it follows that personality should affect how learners understand and interface with educational technologies. In spite of this, very little research has been conducted on how personality impacts learner perception of video games.

Related work has been done, but the primary foci have often been on classifying gamers according to their motivations (King, Delfabbro, & Griffiths, 2010, Westwood & Griffiths, in press), examining specific non-student gamer populations (Griffiths, Davies, & Chappell, 2004, Choi & Kim, 2004), and the perceived negative aspects of gaming (Wood, 2008, Anderson & Bushman, 2001, Griffiths & Hunt, 1998).

This study aims to identify the relationships among undergraduate learners' personality traits and their video game preferences. Learners' responses to an online questionnaire are addressing the following research questions.

1. How do undergraduate learners' personality traits relate to their video game preferences?
2. What categories of learners emerge based on the combination of personality traits and video game preferences?

Methods

Participants

As of this writing, 164 undergraduate students from a large southwestern U.S. university have participated. All are enrolled in an undergraduate computer literacy course. The majority are juniors (40%), followed by sophomores (25%), seniors (23%), and freshman (12%). By gender, 64% are female and 36% are male. In age, they range from 18 to 57 years (mean = 26.6, sd = 8.2), with 84% of the sample being between 18 and 30.

Procedures

Participants voluntarily chose to complete an online questionnaire in partial fulfillment of their course's research participation requirement. The questionnaire was made available to students between September and December 2010.

Instrument

TheVideo Game Preferences section of the survey instrument asked participants to rate how important 37 characteristics were to their enjoyment of a video game on a scale from one (Not at all important) to five (A must-