Does style matter? Considering the impact of learning styles in e-learning

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In order to seek best practice in e-learning design, doctoral research was conducted to identify the impact of learning style preferences on the e-learning environment. Three cohorts were identified: undergraduate e-learners, graduate e-learners, and educators working in e-learning environments. Participants in all three cohorts were asked to complete two data collection instruments: the *Index of Learning Styles* (*ILS*) (Felder & Soloman, 1991, 1994), and a survey questionnaire that contained open-ended questions to obtain qualitative data on the respondents experiences in e-learning in general, and more specifically, on their self-perceptions on their personal learning style preferences. The findings challenge one-size-fits-all approaches to learning design.
Keywords: learning styles, e-learning, active and reflective learners, sensing (facts) and intuitive (theories) learners, visual and verbal learners, sequential and global learners.

Introduction

In order to seek best practice in e-learning design, doctoral research was conducted to identify the impact of learning style preferences on the e-learning environment. Three cohorts were identified: undergraduate e-learners, graduate e-learners, and educators working in e-learning environments.

Materials and methods

Participants in all three cohorts were asked to complete two data collection instruments. The first was a pre-existing non-commercial learning style instrument which belongs to the theoretical 'family' on the continuum of learning styles which believes that learning styles are flexibly stable learning style preferences (Coffield, Moseley, Hall & Ecclestone, 2004). The *Index of Learning Styles* (*ILS*) (Felder & Soloman, 1991, 1994) is a 44 question multiple-choice instrument, which collects quantitative data on learning styles across four learning domains. These domains are: active and reflective learners; sensing (facts) and intuitive (theories) learners; visual and verbal learners; and sequential and global learners. The second data collection instrument was a survey questionnaire that contained open-ended questions to obtain qualitative data on the respondents experiences in e-learning in general, and more specifically, on their self-perceptions on their personal learning style preferences. As a result, both quantitative and qualitative findings were generated in the research. Whilst the analysis of this data is still underway, the initial analysis of the quantitative findings reflected some interesting discrepancies amongst the cohorts, which suggests that learning style preferences may be a consideration in e-learning environments.

Preliminary results

Statistical analysis of the quantitative data discerned that a mild preference existed across all 3 cohorts for active learning environments, and that a moderate preference existed across all 3 cohorts for visual learning environments. A statistically significant difference, however, was recorded in the data between undergraduate e-learners and the other cohorts on the remaining learning style domains. Undergraduate e-learners scored a mild preference for sensing (or factual) learning environments, whilst gradate e-learners and e-educators both scored a moderate preference for intuitive (or theoretical) learning design (p = 0.015). Additionally, undergraduate e-learners scored a mild preference for sequential learning environments whilst gradate e-learners and e-educators both scored a mild preference for global learning design (p = 0.007). The quantitative results of the 3 cohorts are depicted graphically in Figure 1.

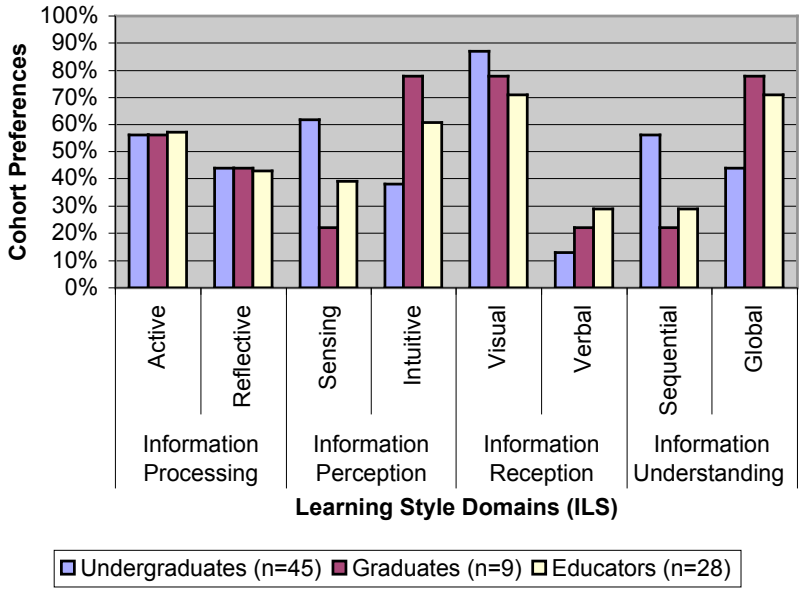

Figure 1: Quantitative comparison of *Index of Learning Styles* across 3 cohorts

Discussion

The preliminary findings of this study suggest that learning styles do appear to be a consideration in the conception, design, and creation of effective e-learning. For the learner, they can also be used to encourage metacognition about how they learn. For the educator, they can be useful in considering not only how they approach their own teaching and learning, but also how they construct e-learning design for their students so that all may learn. The findings also challenge the notion of one-size-fits-all approaches to the construction of e-learning environments, and in particular, those which place a total emphasis on text-based learning materials.

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