

USING TECHNOLOGY TO ENHANCE LEARNING, PROGRESSION & ACHIEVEMENT IN HIGHER EDUCATION

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Introduction

The effectiveness of technology enhanced learning has been researched by (Cavanaugh et al., 2008; Jennings and Kachel, 2010; Lu and Vela, 2015; Perry and Pilati, 2011), some have reviewed blended learning (EL-Deghaidy and Nouby, 2008; Geçer and Dağ, 2012; Karamizadeh et al., 2012; Wong, et al., 2014; Wu et al., 2010). The findings have been focused on module outcomes and not the students overall progression and achievement and their views have not been considered.

An incoherent and limited evidence based approach to technology use in HE teaching and learning, is common practice. limited research exists on the approach taken and the impacts on KPI but none investigating the impact of a consistent programme based approach.

Research has been completed on the use of learning styles to tailor and personalise the use of technology in the classroom to identify whether this can increase its effectiveness in the learning environment (Bishop and Foster, 2011; Graf, et al, 2007; Santo, 2006; Simms, 1998).

Research Questions

1. Have the levels of engagement (virtual learning environment interaction, attendance, achievement) in all year groups of UG students changed because of technology enhanced learning implementation?
2. Have the educational changes influenced the student experience of technology enhanced learning at Middlesex University?
3. Has personalised technology enhancement by student learning style significantly altered the progression of UG students, with mixed learning styles in a taught module?

Key Literature/Literature cited

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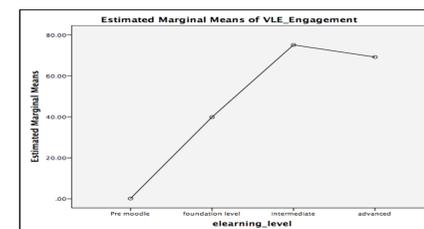
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Research Results to date

Study 1

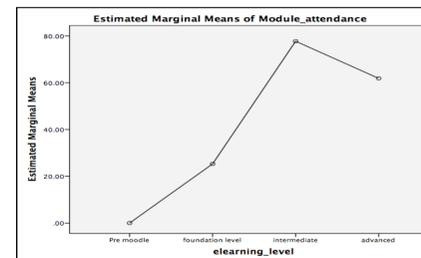
Student assessment

The results showed a significant difference ($P=0.00$) of the module grades pre and post-Moodle integration. The level of e-learning integration had a significant effect on the module grades, with the advanced and intermediate modules having a significantly positive effect on student grade ($P=0.00$).



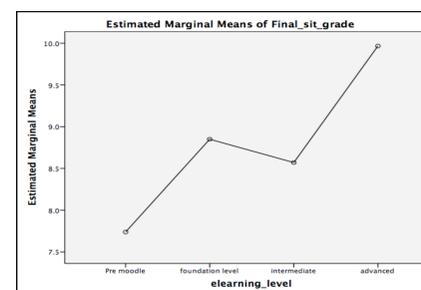
Student attendance

The effect of e-learning integration level on the student modules attendance showed the advanced and intermediate levels had significantly higher student attendance ($P=0.00$), with the intermediate level having a significantly higher attendance than the advanced modules ($P=0.05$).



Student VLE engagement

The students significantly engaged more with the VLE post-moodle implementation ($P=0.00$), <10 VLE touch point per module vs <70 VLE touch points per module. The level of e-learning integration has a significant effect ($P=0.00$) on the number of VLE touch points that the students made per module, with the intermediate and advanced modules have higher touch points per student than the foundation level modules.



Study 2

Findings from the questionnaires and focus groups:

- Students felt the use of technology was increasing on their programme.
- The students felt the use of technology increase through their time on the course. For some students, this was an overnight change from pre moodle to post moodle, whilst others felt a gradual increase as Moodle use increased.
- All students agreed that the use of technology to enhance their programme modules improved positively but wanted its use to increase and perhaps be more intuitive to them.

Summary of results to date

A 2/3 % increase in the 3 identified metrics with generic approach to technology use was found.

Students reacted positively to the increase in technology use in their studies but would like its use to be more coherent and potentially intuitive and personal.

This has mean that in my work a more consistent approach to technology use has been undertaken and personalisation has been encouraged.

Methods

Study 1: Technology implementation in a chosen subject programme cluster, was assessed investigating the impact on the student learning environment, in terms of identified Higher Education performance indicators including; students' assessment results, student attendance, student virtual learning environment (VLE) time, student progression and achievement rates.

The data set was from the last six academic years of cluster data, which means a whole undergraduate degree cycle, before and after implementation.

Study 2: Added to the quantitative findings of study one through qualitative methods, questionnaires and focus groups, with students, to give the performance indicators a greater impact and depth of analysis. The focus groups were conducted in a semi structured group interview approach, to allow the themes from the questionnaires' to be addressed and to explore other topics to increase the understanding of the impact of the changes.

Next Steps

To finish study 3 which, will aim to investigate the impact of personalizing the technology use to support the students learning in and out of the classroom using the learners learning style, (ILS) as devised by Felder and Soloman in 1997.

The support inside and outside of the classroom will then be tailored in accordance to the students learning style as suggested in work by Klasnja-Milicevic, et al, (2011). The students will be asked to complete a learning blog on line throughout the module intervention to gain their views of the personalized support to be explored further in focus groups (Ebner et al., 2010 & Garcia et al., 2015).

Further information

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