

## NZACE Best Practice and Topical Issue Paper

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**Organisation/Group/Institution:** Unitec Institute of Technology, NZ

**Title:** Supporting lecturers of work-integrated learning during their development of effective e-Learning strategies

**Background:** This research project was designed to inform and enhance the teaching capabilities of lecturers engaged with the Certificate in Automotive and Mechanical Engineering (CAME). It was anticipated that the project would lead to developments in lecturer resourcefulness and increased familiarity and comfort in using information technology (IT) for work-based applications. In order to consolidate change, a collective team approach proved to be essential. Over a four year period the team developed and delivered course materials through e-technologies. They progressively acquired a level of confidence in their abilities as they attained new knowledge of ways to creatively engage learners. Because of the extensive level of experience with e-Learning, the team had developed ideas for the future of their chosen mode of delivery through the medium of Web 2.0 software and small form tablet technologies, based on the Android operating system.

However, the team's ambition for enhanced delivery through IT was constrained by the staff capabilities and therefore it was recognised that a series of targeted intervention activities would be essential. A significant gap in the project was identified through a survey and it was concluded that staff needed to be equipped with not only IT skills, but online literacy skills, that would better enable them to obtain knowledge and usefully integrate learning materials that all staff and students should then adopt in order to achieve a better balance of work and study (Yang, Catterall, & Davis, 2013).

**Aims:**

1. To identify gaps between institutional support mechanisms and existing staff capabilities and ambitions.
2. Negotiate for the adoption of a flexible approach to staff professional development that matches student-centred learning.
3. To create conditions that rapidly respond, encourage and engage vocational lecturers with changing technologies & employer graduate requirements.

**Methods:** The purpose of this Collaborative Action Research (CAR) project was to examine vocational lecturers ability to successfully engage with Android based hardware and develop effective and interactive e-Learning activities that would take advantage of mobile technology. Because of the close working relationship between team members, qualitative methodology was used to gather the findings. Informal conversations around the development of materials were recorded, as well as additional data being collected through the use of surveys that were conducted throughout the project (Bliecher, 2013). In addition, observations of team

interaction and frustration during project meetings were chronicled. It is from this data that a series of interventions are recommended.

**Implications/Issues:** Despite deciding that the project would be based on the CAR framework, it became evident that the team lacked an understanding of CAR model complexities. The team approached a colleague with the request that they should take leadership of the project. This subsequently involved the leader communicating with institutional experts and feeding back relevant information. With an agreed formalised structure, the project continued with the team regularly meeting to discuss learning and experiences. The CAR model was discussed at length and all members became familiar with its four components of motivation, reflection, action and knowledge (Bliecher, 2013). Considering motivation, the ambitious nature of the project far outweighed staff capabilities and therefore it was recognised that a series of targeted interventions would be essential. A later survey identified that it was evident that the majority of staff started to believe that change could happen despite conversations with some staff who began to realise that previous professional development courses consisted of mainly outdated pedagogy.

There is evidence to suggest that the team became comfortable with the need to remain continuously abreast of new technologies. An accord amongst the team committed them to stay up to date with the changes in the e-Learning landscape and suggest the use of tools to promote constructivist learning (Lvala 2009). Through professional development of lecturers involved with work-integrated learning may be empowered to look beyond their immediate context and start to explore yet unrealised creativity, which will then positively influence student learning. Lecturers must be given the opportunity to shape and develop new initiatives and should not be singularly driven by institutional agenda (Nelson & Slavit, 2008).

The staff frequently discussed professional development and its value as a medium of acquiring new skills. It was viewed as essential in creating possibilities and promoting changes in learning and teaching practice (Stein, Shephard, & Harris, 2011). In response the team requested directed support from the institution's academic learning department and the initial response was positive. Sessions were organised to develop an understanding of constructivist pedagogies and how the project could positively influence this practice. A further session was arranged to look at the possibilities of app development however, a change in staffing and institutional focus meant that directed sessions would be difficult to arrange. Staff failed to see the relevance of the new institutional e-Learning direction and believed that despite obvious limitations, they had developed their own superior system of learning (Wilson, 2012).

Sufficient time was allocated so that staff could become familiar with the use of the Android tablets. The Collaborative Action Research Team (CART) reflected that an action would be required to make the project and its outcomes more relevant to work-integrated learning. It was therefore concluded that effective integration applications (apps) would be essential (Bliecher, 2013) to bridge the work-integrated learning gap. Each team member was to research and trial various apps of their own choice, with a focus being on an area that related to each staff member's subject knowledge. A key part of this initiative was to reflect on an apps potential in both learning and teaching in the classroom and activities in the workplace. The data gained from this phase of the project was recorded on a Google form which then populated the information in a spreadsheet.

This form was then shared with the whole team so that information recorded would become the focal point of meetings. Each staff member would be responsible for demonstrating the functionality of each app and providing a synopsis of its potential value. This in turn created new knowledge across the team, growing members self-efficacy, and created a link between knowledge and action (Bliecher, 2013). In turn the potential

use of these apps became a powerful driver that helped to promote a new sense of direction, value and motivation.

Following these conversations, staff identified 19 apps that ranged from mathematical assistance to on-board vehicle diagnostic (OBD) interrogation. Exercises were then generated for students to promote the accurate use of online parts catalogues (an essential skill) demonstrating the significant savings in both time and cost.

### **Conclusion**

The journey taken by the team has highlighted some significant shortcomings in their capabilities with the appropriate use of technology. Despite their insistence that they were familiar with concepts of e-Learning and competent at using a range of hardware and software, their knowledge proved to be at a surface level only. In addition, regardless of their willingness to participate in research, team members' lack of experience of research became evident, restricting progress of the project. It was not until a leader was appointed that a structure emerged and the team became truly collaborative action researchers. The rise in self-efficacy promoted independence while increasing belief and commitment to their research. However, the team also started to demonstrate frustration with their institution as it failed to deliver the targeted professional development that they yearned for.

### **References**

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