

Editorial

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The rapid development of technology, in particular the web-based technology, has shown great potential for teaching and learning. It does not only 'provide access to rich sources of information; encourage meaningful interactions with contents; and bring people together to challenge, support, or respond to each other' [Wilson and Lowry, (2000), p.82], but also enables innovative teaching and learning to take place at anytime and anywhere.

This special issue includes ten papers that describe various ways of using technology to support innovative teaching and learning in different contexts. The first three papers present using technology in the subject of English language learning. In the first paper written by Zhang and Qin, Blackboard is used as an online tool by an experimental group of university students to support their autonomous learning of English language listening, reading, and writing. The result shows that the difference between the control group and the experimental group is significant, and the students from the experimental group improve their English learning abilities obviously. The result indicates that using online support tools like Blackboard can promote students' autonomous learning effectively.

In the second paper, Ramadoss and Wang design an online assessment tool for primary school students to learn English grammar and investigate the pedagogical, social and technological affordances of the tool (Wang, 2008). They find that the tool has high pedagogical affordances as students can get immediate feedback, re-attempt questions, and pace their own learning. However, the students seldom use the embedded online communication tool to chat or share with their peers. It seems that the social affordance of the tool is low or not well perceived. With regard to technological affordances, students find that the system is easy to use. In general, they find that such a technology tool has great potential for students to improve grammar learning.

In the third paper written by Zhou, she investigates what learning strategies are frequently used and/or most helpful for university students to learn English vocabulary in

the web-based and multimedia learning environment. She finds that most of the strategies that students frequently use are still shallow strategies, and the strategies taught by the teacher are not necessarily used popularly by students. Nevertheless, a list of new strategies that students often use in the new learning environment is identified. The newly added strategies include looking up in online dictionaries, searching for a word by using search engines, watching online movies, and texting friends.

The following two papers report the design and effect of network-based courses. In the fourth paper, Ma, Li and Wang examine university students' satisfaction with a network-based course about market investigation and prediction. They find that the students generally have a relatively high level of satisfaction with the network-based course; major students have a higher level than non-major students; and the satisfaction with the teacher-student interaction tends to be the lowest. In addition, the study indicates that having prerequisite knowledge is vital for students to use a network-based course.

In the fifth paper written by Wang, Hui and Li, they analyse instructional problems in the second degree programme and the necessity of developing online learning platforms to support the second degree programme in the university. The paper describes the design of a web-based course about digital media analysis for the second degree programme, focusing on its multimedia resource database construction, video resource construction, and platform construction. The student examination result shows that the students' performance after using the online course has been improved.

The next two papers focus more on the teacher's perspective. In the sixth paper, Gao explores the pre-service teacher's learning to teach with technology throughout three semesters of the teacher preparation programme. She finds that the teacher transforms her teacher identity by playing the role of a technology advocate to inspire her college peers and cooperating teachers to pedagogically use information technology to enhance what/how her pupils learn. The finding suggests that learning to teach with technology is also a process of constructing teacher identity.

The use of technology has changed the way of teaching and learning. In the seventh paper, Liu, Li and Han propose a comprehensive model to monitor teaching quality throughout the whole teaching process. By following the model, they have explored some innovative practices in teaching material construction, teaching content development, and students' assessment in recent years. Furthermore, they also have achieved positive results in the innovations.

Interface design is important in online learning environment construction. In the eighth paper about measurement of colour brightness, Sun, Yang and Li propose a colour brightness calculation model. It provides an intuitive colour brightness processing method for web-based course design or interface design. It enables designers to easily get a precise brightness value of a colour. Also, the proper selection and use of colours based on this model has the potential to make web-based courses and other computer programmes more attractive to users.

The last two papers describe the use of 3D technology in online learning environment design and development. In the ninth paper written by Wang and Zhang, they use the 3D entity design software Inventor to design an online website for students to study the course of engineering graphics. The course is usually abstract, class time is limited and students' levels are uneven, constructing an online learning environment is hence urgent. They hope that the online course will enable students to quickly get familiar with the spatial way of thinking, and the independent and interactive learning approach.

In the last paper, Peng and Peng describe the application of a web-based 3D remote virtual laboratory platform in the course of electrical and electronic engineering. The paper first introduces the project background and the way of constructing the remote virtual experiment platform by using the LabVIEW software. The result of using the platform shows that this virtual laboratory provides students with an easy and convenient way to preview experiments, and students can have a better understanding on the circuit after using the platform. Also, they take less time to complete real experiments.

In conclusion, the papers collected in this special issue present how technology is used to support innovative teaching and learning in various contexts. The use of technology does not only have the potential to enhance students' learning, but also have the possibility to enable teachers to establish their teacher identities.

References

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