

Technology enhanced learner ownership and learner autonomy through creation

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Introduction

Learner autonomy refers to a situation where learners are reflectively engaged in their own learning (Arnold 2006; Benson 2001; Little 1994). Autonomous learners learn more efficiently and effectively because they tend to regularly reflect on their own learning process and therefore they take control of their own learning. With the perception of learner ownership, autonomous learners are more independent and responsible. Thus, while managing their own learning, they do not suffer from the lack of learning motivation. They are usually proactive and are willing to take risks during the learning process.

Furthermore, learning has been given brand-new features in the twenty-first century due to the advancement of technology (Pellegrino and Hilton 2012; Ting 2015). Learners, therefore, have started learning through different approaches, rather than solely the traditional teacher-centered and one-size-fits-all approach which has been used for several decades. The traditional teacher-centered and one-size-fits-all approach usually fails to identify and support learners' individual differences and consequently it does not effectively cultivate students' autonomy and learner ownership. As described above, the adoption of advanced technologies in education brings new opportunities for providing learners with brand-new learning experiences. For example, with the open educational resources and the Internet, learners are able to obtain rich information and learning resources (Cronin 2017; Smyth et al. 2016). What's more, they are able to be engaged in authentic learning through 3D virtual worlds (Lan et al. 2015). Through the integration of

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internet of things (IoT), wearable technology and mobile seamless computing, learning is no longer constrained by space and time (Khaddage et al. 2016).

However, in spite of the abovementioned potential applications of advanced technologies in learning, challenges are inevitable because simply by introducing advanced technologies to educational settings cannot guarantee effective and autonomous learning. The corresponding pedagogical theories and approaches, as well as appropriate evaluation methods and learning analytical technique, should be involved (Lan 2014; Lan et al. 2017). Furthermore, among the well-known student-centered approaches, learning by creation is an approach to shifting learners as the consumers to them as the creators of learning contents and consequently increasing their awareness of taking learning ownership (Blau and Shamir-Inbal 2017; Johnson et al. 2015). In fact, creation is a kind of autonomous learning process during which learners are actively engaged in investigating matters, solving problems, reflecting ideas and producing contents. Based on the abovementioned benefits of learning by creating, it is clearly worth the effort of educators and researchers to investigate the effects of cultivating students' ability to become creators in a technology-rich environment on learner autonomy and learner ownership.

The aim of this special issue is to provide a platform for researchers to present their research findings that may offer insights into the role of advanced technologies in enhancing learner autonomy and learner ownership by honing learners' creativity. These are open questions worth further exploration. After a rigorous review process, nine high-quality research papers, investigating how technology-enhanced creativity increases learner autonomy and ownership from different perspectives, have been accepted for publication in this special issue. The publication of this special issue would help us develop a further understanding of the potential role of state-of-the-art technology in cultivating learner creation and learner autonomy and ownership. We hope that these studies will inspire future research in this direction.

In the first paper entitled "The effects of computer-supported self-regulation in science inquiry on learning outcomes, learning processes, and self-efficacy," Lai, Hwang, and Tu investigated the effects of the usage of a self-regulated science inquiry approach on elementary students' self-regulation and science learning performance. Fifty-six fourth graders participated in this study and the researchers identified the benefits based on their results obtained from the inquiry into the students' inquiry process with the self-regulated learning strategy. In the second paper, Shadiev, Hwang, and Liu built a mobile multimedia learning system (MMLS) for learners of English as a foreign language. Fifty-three junior high school students participated in this research. Twenty-seven of them were in the control group learning with the conventional approach while 26 of them were in the experimental group learning by using MMLS. Besides, two studies were conducted. It was found in Study 1 that the students learning with MMLS outperformed their counterparts learning with the conventional approach at the posttest. In Study 2, the students were asked to carry out both individual and cooperative tasks. The results indicated that the students performed better when they completed cooperative tasks than when they did individual ones. Liu, Tai, and Liu confirmed the effect of a free-space digital storytelling approach on elementary students' English learning performance and motivation. In their study, 64 sixth grade students participated and engaged in the create-to-learn activities. By collecting and analyzing three data sources, including motivation surveys, achievement test scores, and digital stories, the researchers found that the proposed storytelling pedagogy allows students to stretch their creativity while demonstrating their language productivity and it benefits their English learning, regarding both performance and extrinsic goal orientation and elaboration.

Next, in the fourth paper, Wang and Hong investigated the social cognitive perspective of collective regulated learning, and the relationships among collective beliefs, collaborative behaviors, and collaborative performance through collaborative creation in the computer-supported collaborative learning (CSCL) environment. A total of 96 college students participated in the mixed study, collecting and analyzing both quantitative and qualitative data. The results confirmed the value of the collective task, as well as its capability of predicting students' group cohesion and collaborative performance. In the fifth paper, Chen, Fan, Chang, Chang, and Chen developed a situational comic play (SCP) learning system for elementary students to create comic dramas for English learning. Four classes of fifth graders participated in their study, one learning English in the conventional approach, while the other three classes learned English by using SCP. Both knowledge application tests and questionnaire on learner autonomy and ownership were administered. The finding was that the students learning with comic drama creation outperformed those without such a learning experience. Besides, the students also expressed in the questionnaire that by using SCP for learning English improved their learning autonomy. In the sixth paper entitled "Improving primary students' collaborative problem solving in project-based science learning with productive-failure instructional design in a seamless learning environment," Song adopted the productive failure (PF) instructional design in a seamless learning environment for enhancing elementary students' collaborative problem-solving competency in project-based science learning. A total of 53 sixth graders participated in this study. Both quantitative and qualitative data were collected and analyzed. The results included the benefits of implementing the PF instructional design to increase elementary school students' collaborative problem-solving competency in science learning in a seamless learning environment. In the seventh paper, Liu, Huang, and Xu investigated the effects of carrying out different activities, individual versus cooperative, on students' English storytelling skills. A total of 55 sixth graders participated in their study. Twenty-eight students completed the individual tasks, while the others completed the cooperative tasks. Four kinds of data, including knowledge test scores, language learner autonomy, foreign language classroom anxiety, and emotion, were collected during the study. It was found that the students working cooperatively outperformed those working individually in all the aforementioned elements. In the eighth paper entitled "Designing for 21st century learning online: A heuristic method to enable educator learning support roles," Nacu, Martin, and Pinkard proposed a heuristic method adapted from a traditional heuristic evaluation method which provides designers of online learning systems with a holistic view of how adult learning support is enabled across the system. The proposed method was then used in a middle school context and was evaluated. Additionally, a framework of heuristics aiming at reflecting specific educator learning support roles that have been found to be important for youth learning, particularly for supporting twenty-first century skills was also proposed. Last but not least, in the ninth paper entitled "Fostering student autonomy in English learning through creations in a 3D virtual world," Yeh and Lan developed a 3D virtual learning platform (Build & Show), which allows children above 9 years old to create their own 3D virtual worlds, individually or cooperatively. The tool was used by 29 fifth graders for 4 months. Multiple types of data, including the questionnaire on students' autonomy, the 4-month none-participant classroom observation, the feedback from the participating students and teachers, and an analysis of videos created by the students, were collected and analyzed. The results suggested that the proposed Build & Show platform was a medium for enhancing students' autonomy in learning. The students enjoyed the freedom to explore the new learning platform, Build & Show, and the freedom to build up their 3D VR worlds. Their learning autonomy was therefore improved.

However, please note this paper was inadvertently included in Volume 66, Number 3 (June 2018) and thus cannot be included here. Springer regrets this error. This paper may be accessed via <https://doi.org/10.1007/s11423-017-9566-6>.

The domains covered in the abovementioned papers include science, foreign language, and online learning. Moreover, the participants range from elementary school students to college students. Thus, the papers included in this special issue will likely provide readers with a deep and extensive understanding of the relationship between creation and learner autonomy and ownership. Undoubtedly, more issues for future research will be inspired by reading the articles of the special issue.

References

- Arnold, L. (2006). Understanding and promoting autonomy in U.K. online higher education. *The International Journal of Instructional Technology and Distance Learning*, 3, 33–46.
- Benson, P. (2001). *Teaching and researching autonomy in language learning*. Harlow: Longman/Pearson Education.
- Blau, I., & Shamir-Inbal, T. (2017). Re-designed flipped learning model in an academic course: The role of co-creation and co-regulation. *Computers & Education*, 115, 69–81.
- Cronin, C. (2017). Openness and praxis: Exploring the use of open educational practices in higher education. *International Review of Research in Open and Distributed Learning*, 18(5). <http://www.irrodl.org/index.php/irrodl/article/view/3096/4301>.
- Johnson, L., Adams Becker, S., Estrada, V., & Freeman, A. (2015). *NMC horizon report: 2015 K-12 edition*. Austin: The New Media Consortium.
- Khaddage, F., Muller, W., & Flintoff, K. (2016). Advancing mobile learning in formal and informal settings via mobile app technology: Where to from here, and how? *Educational Technology & Society*, 19(3), 16–26.
- Lan, Y. J. (2014). Does second life improve Mandarin learning by overseas Chinese students? *Language Learning and Technology*, 18(2), 36–56.
- Lan, Y. J., Chen, N. S., Li, P., & Grant, S. (2015). Embodied cognition and language learning in virtual environments. *Educational Technology Research and Development*, 63(5), 639–644.
- Lan, Y. J., Chen, N. S., & Sung, Y. T. (2017). Guest editorial: Learning analytics in technology enhanced language learning. *Educational Technology & Society*, 20(2), 158–160.
- Little, D. (1994). Learner autonomy: A theoretical construct and its practical applications. *Die Neuren Sprachen*, 93(5), 430–442.
- Pellegrino, J., & Hilton, M. (2012). *Education for life and work: Developing transferable knowledge and skills in the 21st century*. Washington, DC: National Academies Press.
- Smyth, R., Bossu, C., & Stagg, A. (2016). Toward an open empowered learning model of pedagogy in higher education. In S. Reushie, A. Antonio, & M. Keppell (Eds.), *Open learning and formal credentialing in higher education: Curriculum models and institutional policies* (pp. 205–222). Hershey, PA: IGI Global.
- Ting, Y. L. (2015). Tapping into students' digital literacy and designing negotiated learning to promote learner autonomy. *Internet and Higher Education*, 26, 25–32.

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