

Digital Badge Use in Specific Learner Groups

Jacob H. Askeroth, Purdue University, West Lafayette, USA

Timothy J. Newby, Purdue University, West Lafayette, USA

ABSTRACT

As educational technology continues to advance, new technologies continue to enter the scene that seek to enhance the delivery and reception of learning in both academic and industry settings. Digital badges are a recent educational innovation that has unique characteristics and capabilities that can allow for individualized pathways for learning and are being implemented in a variety of settings and for multiple purposes. This article reviews the literature on digital badges and four of their core theoretical underpinnings – behaviorism, goal-setting, constructivism, and gamification theory – as well as empirical studies that highlight the contexts and specific learner groups in which digital badges are being utilized. This review contributes to both scholarly research and practical applications of digital badges and offers potential directions for future research involving digital badges.

KEYWORDS

Behaviorism, Constructivism, Digital Badges, Educational Technology, Game Theory, Gamification Theory, Goal-Setting Theory, Groups of Learners

INTRODUCTION

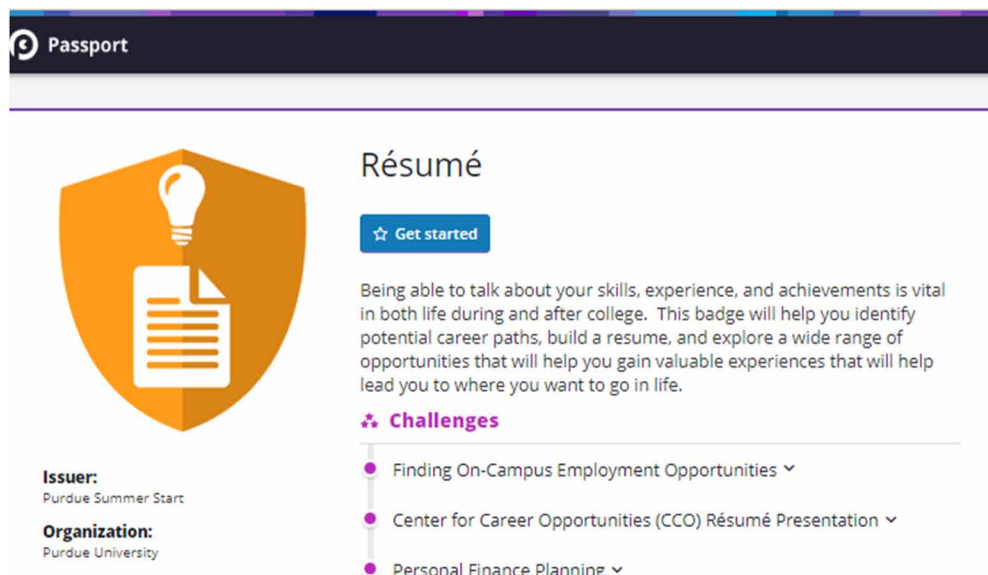
Educational technology's impact on how instruction is delivered is ever-changing as new technologies enter the academic and industrial scene on a seemingly regular and consistent basis (Mah, 2016), prompting ongoing evolutions to how education is delivered but also how it is assessed and awarded. Some research identifies current and upcoming shifts in the occupational landscape that call for new educational models (UPCEA, 2017). Digital badges are one educational technology tool with unique characteristics and capabilities that make them “well suited to foster the pursuit of individualized pathways for learning” (Finkelstein, Knight, & Manning, 2013, p. 3; see also Pöldoja, Jürgens, & Laanpere, 2016) and can meet the evolving needs of learners.

A digital badge is a web-based visual graphic that represents a skill or competency earned by a learner who successfully completes a set of tasks or criteria outlined by a credible issuer. Figure 1 provides an example of a digital badge used by Purdue University for a summer program for incoming undergraduate students issued using the University's internal digital badge platform known as Open Passport in 2016. Due to their digital format, a digital badge also contains information regarding the requirements of the learner in order to earn the badge (Glover, 2013a; Grant, 2014;

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Figure 1. Example of digital badges used by Purdue University's Division of Summer Session's Summer Start program in 2016 (Source: Open Passport, Purdue University)



Erickson, 2015; Mah, Bellin-Mularski, & Ifenthaler, 2016; Mah, 2016). Learners are able to display and share these badges via online portfolios with peers, current or potential employers, and on social networks (Hope & Jones, 2016). Digital badges and their systems have multiple inherent affordances, many of which can provide motivation to learners, and offer an alternative way to recognize, credential, and assess learning (Ellis, Nunn, & Avella, 2016; Fanfarelli & McDaniel, 2017; Jovanovic & Devedzic, 2015). Moreover, digital badges provide a shareable portfolio of visual representations for both credentials and skills to communicate individual competency (Cheng, Watson, & Newby, 2018; Finkelstein et al., 2013).

Digital badges may never fully replace the traditional academic transcript, which only show the name of courses (often abbreviated) and the grades earned therein by the learner. However, digital badges can show a more detailed and arguably more complete picture of what the individual knows and can do (Matkin, 2018) that can be easily communicated through shareable platforms at the discretion of the learner (Bowen, 2014; Hope & Jones, 2016; Ostashewski & Reid, 2015) and can also recognize prior learning (Educause, 2014). With a wide range of application, many institutions and organizations are using digital badges in multiple industries as they gain traction in both formal and informal educational settings. Open Badges by Mozilla appears to be the digital badging platform most widely used by a variety of organizations (Open Badges, n.d.), but the complete list of digital badge-issuing platforms and the organizations that utilize and display them is not entirely clear (Badge Alliance, n.d.; IMS Global Learning Consortium, n.d.). Some institutions, like Purdue University and University of California-Davis, have developed their own digital badge issuing platforms for internal use (Fain, 2014).

Gibson, Ostashewski, Flintoff, Grant, and Knight (2013) conclude that “research implications are quite broad and varied” (p. 409). While the utilization of digital badges is on the rise (Blumenstyk, 2018; Gamrat, Zimmerman, Dudek, & Peck, 2014), the number of institutions and organizations that formally employ them remains relatively small. While the empirical investigation of the use of digital badges in educational contexts among special learner groups in the literature continues to increase with time, the use of digital badges within educational contexts and specific groups is still in its infancy (Law, 2015). This literature review will consider the following questions: 1) what are

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