

# Evaluating the Use of an Online Video Training Program to Supplement a Graduate Course in Applied Behavior Analysis

Gabrielle T. Lee, Michigan State University, East Lansing, USA

Tzu-Fen Chang, Central Michigan University, Mt. Pleasant, USA

## ABSTRACT

The primary purpose of the present article was to evaluate the effects of a supplemental online video program on student quiz performance for an online course in applied behavior analysis. Nineteen graduate students, in ages ranging from 22 to 40, agreed to participate in this study. A within-subject group design was used. The control condition contained textbook readings and accompanied self-guided notes, while an online video training program was added to supplement the experimental condition. Results indicated that the students scored significantly higher in their weekly quizzes under the condition supplemented with the online video training program. The students perceived the video training program as equally helpful as the textbook, but they enjoyed the online videos significantly more than the textbook. Students' self-reported enjoyment of the online videos was also positively correlated to their quiz performance under the condition supplemented with the videos.

## KEYWORDS

Applied Behavior Analysis, Higher Education, Online Instruction, Textbook Instruction, Video Instruction

## INTRODUCTION

Interventions for individuals with autism spectrum disorder (ASD) guided by the principles of applied behavior analysis (ABA) are recommended as evidence-based practices (Wong et al., 2015). As the number of young children diagnosed with ASD increases, so does the demand for qualified professionals providing ABA services. Additionally, professionals in related disciplines (e.g., special educators) who work with individuals with ASD also seek ABA knowledge. To meet the demands of consumers, online programs in higher education designed to prepare inter-disciplinary service providers for ABA interventions have increased dramatically in recent years (Behavior Analyst Certification Board, 2016). Online programs become an alternative to traditional on-campus programs due to schedule flexibility and convenience of accessibility to the students as well as contributing to cost-savings for the universities (Buzhardt & Semb, 2005).

The quality of instruction is the foundation of quality programs. Pedagogy consisting of empirically validated instructional practices for learners at all ability levels has traditionally been a research focus of ABA (e.g., Keller, 1968; Skinner, 1968). This body of research has suggested several effective instructional practices should be applied to college-level courses, including sequenced materials in units to criterion performance, active student responding, academic engagement, repeated measures

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with immediate or specific feedback, individualized pacing, and creating motivation to learn through positive reinforcement rather than escaping from aversive contingencies (Boyce & Hineline, 2002; Fienup, Hamelin, Reyes-Giordano, & Falcomata, 2011; Heward, 1994; Keller, 1968).

The increases of ABA online courses in higher education require effective teaching methods be retested when implemented as part of an online format. For example, effective pedagogy derived from behavioral research in the traditional classroom setting may require modification when transferred to online virtual classroom settings in higher education. With the advancement of technology, the online format of instruction has been recognized to potentially facilitate individualized, active, and independent learning processes; however, a review of existing research suggests that empirical support for the applications of effective teaching strategies or online instructional programs in higher education remains limited (Means, Toyama, Murphy, Bakia, & Jones, 2010).

Web- or computer-based educational programs have been developed to teach principles of ABA, and some of these incorporate effective instructional practices. For example, research studies on college instruction addressed the need to incorporate effective teaching practices into an online training program by developing a fully online personalized system of instruction to deliver psychology courses to college students (Martin, Pear, & Martin, 2002a, 2002b; Pear & Crone-Todd, 1999). The components of the above online personalized system of instruction included self-paced unit tests to mastery criterion and the use of proctors to provide quick feedback. Their findings highlight the potential utility and feasibility of a personalized system of instruction in university online courses. However, the use of proctors in the online system to provide accurate and timely feedback on frequent short essays can be challenging to most instructors (Pear & Crone-Todd, 1999).

Other programs have incorporated effective teaching practices through the development of online video training programs. The programs have been found to be effective in teaching parents, staff, and professionals to acquire ABA knowledge (Fielding, 2012; Granpeesheh et al., 2010; Hamad, Serna, Morrison, & Fleming, 2010; McCulloch & Noonan, 2013; Young-Pelton & Doty, 2013). One example of such online video training programs is the video-based textbook produced by Autism Training Solution (ATS), currently housed on the Relias Learning website. ATS was designed to teach ABA knowledge by incorporating behavioral tactics or components of behavioral instruction models, including self-paced instruction, sequenced instructional modules with small units, video demonstrations of teaching procedures with narratives or scripts, and competency checks with unlimited attempts to complete unit quizzes until achieving mastery.

Fielding (2012) reported that graduate students in an ABA course reached a high level of mastery of materials presented through ATS, as measured in the ATS pre and posttests. However, further information regarding the use of other course materials was not available, and it was not clear whether ATS materials were supplemental to the textbook or the only source of instruction in that course. Subsequently, Young-Pelton and Doty (2013) conducted state-wide professional training using ATS and surveyed participating teachers to obtain feedback about the training. Their survey indicated positive responses on the implementation of evidence-based practices from teachers receiving the ATS online training. Unfortunately, the effects of ATS on teachers' knowledge and skill acquisition of evidence-based practices was not assessed and cannot be inferred from the survey.

Finally, McCulloch and Noonan (2013) trained paraprofessionals to deliver mand training to children with ASD using the mand training modules of ATS. In addition to ATS, the researchers added a checklist for paraprofessionals to self-monitor their own mand implementations. They found that ATS combined with the self-checklist effectively taught two out of three paraprofessionals to implement mand training with relatively high levels of fidelity. Only one ATS module was used, and no comparison or component analysis of their training package was evaluated. Thus, the isolated or additive effects of ATS on staff implementation skills remain unclear.

Additional online video training programs have taught ABA skill acquisition, such as training university students or direct therapists to implement discrete trial instruction (Pollard, Higbee, Akers, & Brodhead, 2014) and backward chaining (Nosik & Williams, 2011). These studies also involved

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