

# A Mobile-Learning-Based Training Model for Flight Attendants in Thailand

Tanisa Santithaninthorn<sup>1</sup>,  
Laura Brahmakasikara<sup>2</sup>,  
and Thanawan Phongsatha<sup>3</sup>

Graduate School of Advanced Technology Management,  
Assumption University of Thailand, Bangkok, Thailand

<sup>1</sup>yuitanisa03@gmail.com

<sup>2</sup>brahmakasikara@au.edu

<sup>3</sup>thanawan.phongsatha@gmail.com

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**Abstract** - The main objective of this study was to determine if the flight attendant training model which was developed in this study which employed the use of mobile based training as tool would improve the academic performance of airline business students at a private university and that the students would show the intention to adopt the type of learning. The study employed a mixed methodology which involved an in-depth interview, gathering of secondary data, and review of literature for the creation of the prototype training model. In order to fulfill the main objective, a quasi-experiment which employed a pre-test and post-test and an administration of a questionnaire were done. Results revealed that the students improved in terms of academic performance and showed that the students had the intention to enroll in a mobile based learning and adopt it in the future, which ultimately implied that the prototype model was effective.

**Keywords** - Mobile Based Learning; Flight Attendant Training; Academic Performance; Diffusion of Innovation Theory

## I. INTRODUCTION

From the year 2016 until present, there has been growth and expansion in terms of demand and system capacity of air transport which directly affect the workforce development and

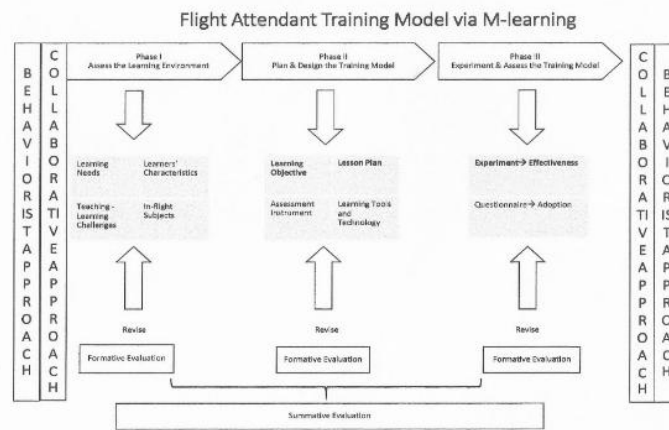
training of flight attendants. The Thai government's Civil Aviation Authority of Thailand (CAAT) has stated that in order to expand, the training of flight attendants must not only take place at the operative or airline level but teaching and learning must be embedded at the university level (Bangkok Post, 2016). The training of flight attendants until present has always stressed on the practical skills based on the areas of safety, personality, and service, with teaching and learning being 'on-the-job-training' or OJT. Until present, it is apparent that there has not been specific flight attendant training model which incorporates m-learning as a teaching tool in teaching flight attendant subjects.

In parallel to the above mentioned, an online or e-learning has been introduced and adopted by both the educational institutions and airlines as part of operation and training (Bartengeyer, et al., 2013). A pure classroom-based training has shifted to a mixed e-learning and classroom-based training for flight attendants. Despite the mentioned, researchers have stated lack of research work related to human resource management of the aviation and e-learning as part of aviation training (Appelbaum & Fewster, 2004). Learning has not been done through systematic mobile based learning.

With all the above mentioned, this study aimed to formulate a flight attendant training

model through the use of a mobile based learning as tool. The formulation of the flight attendant training model was based on the data collected from the in-depth interview with airline experts, existing data, and literature review. In order to test the effectiveness of the training model, a quasi-experiment was conducted with two airline business classes. The effectiveness of the flight attendant training model was determined based on the

airline business students' academic performance before and after learning through mobile based training. In addition, the study also investigated the students' attitudes towards intention to adopt the flight attendant training model using mobile based learning through the use of Diffusion of Innovation Theory-based questionnaire.



## II. LITERATURE REVIEW

The study embraced four main concepts which include m-learning as tool of teaching and learning, and the two approaches to learning and teaching which include the behaviorist and collaborative approaches, and the Diffusion of Innovation Theory or DOI (Rogers, 2003).

### A. M-Learning

M-learning as cited by Brown (2003) is an extension of e-learning, which has the key benefits of increasing productivity by making learning available anywhere and anytime, allowing learners to participate in educational activities without the restriction of time and place. With learning content being the same, m-learning combines the advantage of the internet making education available any time and any place possible (King, 2006). The design of early computer learning system from the early days embraced behaviorist approach to learning (Ally, 2008). The many advantages of mobile devices make m-learning appropriate to support student-centered learning.

### B. Behaviorist Approach

Behaviorist approach is an approach which presumes that change in observable behavior is caused by external stimuli in the environment (Skinner, 1974). To Skinner, the term 'behavior' refers to observations of the consequences of the behavior. The advantage of designing e-learning which embraces behaviorist approach allows learners to meet the learning objectives as well as expected outcome (Keramida, 2015). Through structured and well-designed behavioristic e-learning, scores from tests and quizzes provide measurable outcome. Learning similar to one of flight attendants which involves practical subjects coincide with the characteristics of behaviorist approach. A well-designed lesson course structure when put into m-learning fitted the creation of flight attendant training model in this study.

### C. Collaborative Approach

Collaborative approach was developed by Vygotsky (1978) based on socio-cultural principles and has become a 21<sup>st</sup> century trend (Laal, et al., 2012). Collaborative learning involves learning through active engagement among

learners in order to fulfill common learning goal. Distinguished characteristics of collaborative approach includes, small group learning, common group task or activity which allows individuals to work with interdependence, individual responsibility, and accountability (Lejeune, 1999 as cited by Chandra, 2015). All the mentioned coincides with the nature of task of flight attendants. In this study, collaborative approach was reflected in the task assignment and group work of flight attendant students.

#### **D. Diffusion of Innovation Theory**

The Diffusion of Innovation Theory or DOI Theory was founded by Rogers in 1962 and finally fine-tuned in the year 1995. The theory focuses on understanding how, why and at what rate innovative ideas and technologies spread in the social system (Rogers, 2003). The DOI theory mainly discusses the rate to which potential users make decisions to adopt or reject an innovation based on their beliefs on the innovation (Rogers, 2003; Lee, et al., 2011). The five characteristics include relative advantage, compatibility, complexity, triability, and observability.

### **III. METHODOLOGY**

This study employed a mixed-methodology design. The qualitative part of the research involved in-depth interview, literature review, and secondary data obtained from universities offering flight attendant courses which were used in designing the flight attendant training model and the contents of learning. A mobile learning application was then designed to deliver the teaching and learning of contents through mobile devices which include tablets and smartphones. The quantitative part included the quasi-experiment to determine the effectiveness of the model and the questionnaire to determine the students' attitudes towards intention to adopt m-learning of flight attendant training.

The sample of this study was 40 third and fourth-year airline business students in a private university in Bangkok. Twenty students enrolled in Onboard Safety and Security subject and 20 students enrolled in Personality Development and Grooming subject, learned through the mobile based learning application. Before the students started the mobile based learning, the students had to download the mobile application to take the pre-test. The mobile based learning of the two subjects commenced after the pre-test which took 14 weeks. Post-test was taken through the mobile application at the end of the semester. The questionnaire (Atkinson, 2007; Rogers, 2003) was administered in class after the quasi-experiment to determine the students' attitudes towards intention to adopt m-learning as learning tool for the flight attendant training.

### **IV. DATA ANALYSIS**

The paired sample t-test was used to analyze the pre and post-test scores and the intention to adopt was analyzed using multiple regression.

### **V. RESULTS**

There were two hypotheses for this study.

**H<sub>01</sub>:** There is no difference in the academic performance of students before using the m-based learning method and after using the m-based learning method.

A pair sampled t-test was used to determine the effectiveness of the mobile based learning in terms of the pre and post-test scores of the two subjects. For the subject of Onboard Safety and Security, there was a significant difference in the students' pre-test scores and post-test scores;  $t(19) = -7.535$ ,  $p = .000$  as shown in Table I.

**TABLE I  
PAIRED SAMPLE T-TEST FOR ONBOARD SAFETY AND SECURITY**

	N	Mean	SD	T	Df	Sig (2-tailed)
Pre-test	20	.803	3.59	-7.53	19	.000
Post-test Scores						

For the subject of Personality Development students’ pre and post-test scores;  $t(19) = -11.831, p = .000$ . and Grooming, the results shown in Table II, also showed a significant difference in the

**TABLE II  
PAIRED SAMPLE T-TEST FOR PERSONALITY DEVELOPMENT AND GROOMING**

	N	Mean	SD	T	Df	Sig (2-tailed)
Pre-test	20	.726	3.25	-11.8	19	.000
Post-test Scores						

The paired sample t-test indicates that there were differences in the academic performance of students before and after using the m-based learning, which implies that the m-based learning method is successful in improving the scores of students in both subjects based on the statistical results.

**H02:** The Diffusion of Innovation Theory (DOI’s) does not influence students’ attitudes towards intention to adopt mobile based learning as a learning tool for the flight

attendant training.

For the second hypothesis, questionnaires were distributed to the samples after the learning. The results were analyzed through multiple regression analysis in order to determine whether the five attributes of the DOI theory influenced the students’ intention to adopt m-based learning.

**TABLE III  
MODEL SUMMARY**

R	R Square	Standard Error of Estimate	F Change	Sig. F
.599	.359	.419	3.84	.008

**TABLE IV  
ANOVA**

Sum of Squares	Df	Mean Square	F	Sig
3.339	5	.668	3.84	.008

The table of model summary in Table III, indicates the characteristics of the model and its data. R square of .359 suggests that 35.9 percent of the variance in the dependent variable is explained by the independent variable. As indicated in Table IV, the F ratio

for the whole regression equation is 3.84 as related to the model. The significant value (Sig.) of 0.008, which is less than 0.05, indicates an overall association between the independent variable of the Diffusion of Innovation characteristics (which comprise of

relative advantage, compatibility, complexity, trialability, and observability) with dependent variable of intention to adopt the m-based learning. As the significant value is less than 0.05, null hypothesis (H<sub>2o</sub>) was rejected and alternative (H<sub>2a</sub>) was accepted. Consequently, it could be assumed that the Diffusion of Innovation Theory (DOI's) had an influence on the students' attitudes towards intention to adopt mobile based learning as a learning tool for the flight attendant training.

## VI. CONCLUSION

The result of t-test implies that the mobile based learning is effective based on the improvement of academic performance of flight attendant students. As for the second hypothesis, the result shows that the Diffusion of Innovation Theory (DOI's) influences students' attitudes towards intention to adopt mobile based learning as a learning tool for the flight attendant training. The results suggest that mobile based learning has the capability to become an effective and successful means of learning in the upcoming future. Results from the study positively confirm the technical excellence of the mobile based learning application. In terms of academic performance, students showed improvement in the core airline subjects. Apart from the mentioned, students after learning, personally expressed their intention to adopt mobile based learning as means of learning.

## VII. RECOMMENDATIONS

It is recommended that school administrators and airline training teachers initiate learning through mobile based application for flight attendants and flight attendant students. The employment of mobile based learning not only improves the performance of learners but it will also reduce training expenses for flight attendants.

It is strongly recommended that the school or airline administrators invest in the creation of the application. Technical aspect of the application has to be 'user-friendly' and convenient to use. Second, in order for the campaign to be

successful, the administrators have to pay attention to the integrated marketing communication (IMC) to create both product awareness and brand awareness. Brand recognition and awareness according to marketers, is most important for product or brand selection at point of purchase (Bettman, 1979; Rossiter & Percy, 1987). Lastly, it is advisable that school and airline administrators keep up to date in terms of learning content and trend as flight attendant operation and training solely rely on rules and regulations set by ICAO.

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