

# **“ADUCATING” CONSUMERS IN THE DIGITAL AGE? A META-ANALYSIS ON STUDYING CONSUMER LEARNING PROCESS IN AN INTERACTIVE GAME-BASED PLATFORM**

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## **ABSTRACT**

*The digital technologies have given consumers powers to reshaped the ways that they used to perceive advertising message, brand and product knowledge. Marketers and advertising practitioners should pay particular attention on these changes of consumers' behaviors. It is because, all these changes are leading to a completely new level of delivering brand/product messages, and the focus of this research – the consumer learning process and “Aducation”. A meta-analysis is applied in this research. Both consumers' brand knowledge indicators and decision-making indicators are adopted to assess the consumer learning process in both the interactive game-based and social media platforms.*

**Keywords:** Aducation; Consumer Learning; Brand/Product Knowledge; Interactive Platforms; Social media.

## **PURPOSE OF THE STUDY**

The tremendous development of advanced interactive platform and mobile technologies in the pre-5G period has potentially changing the way how consumers perceive brand and product knowledge as well as their decision-making process. Likewise, current consumers are no longer playing a passive role, but rather taking an active role in search, understand, analysis and evaluate various knowledge of brands and products. The rich information platform provides consumers with *powers* to highly participate in brand/product communication circle. The technologies have reshaped the ways that consumers used to perceive advertising message, brand and product knowledge. Marketers and advertising practitioners should pay particular attention on these changes of consumers' behaviors. It is because, all these changes are leading to a completely new level of delivering brand/product messages, and the focus of this research – the consumer learning process. Thus, this research aims to deepen our understanding of “Aducation” in digital era. Our research team attempts to study the factors of consumers learning process in both the interactive platform and social media platform. A meta-analysis was applied to study consumers' brand/product recognitions and their decision-

making process in the said two significant platforms. This research is not going to prove hypothesis nor generate new theories of digital “Aducation”, but rather deepen our understanding of the factors in consumers learning in the digital age.

## **“ADUCATING” CONSUMERS IN THE DIGITAL WORLD**

Consumer learning is an individual information process that changes consumers’ memory, attitude and behavior towards brand’s attributes (Arnould et al., 2001). Followed by the tremendous development of social media, mobile technologies and virtual technologies, nowadays consumers could obtain rich brand knowledge and product information from any open online/offline platforms easily. It implies that these new technologies provide retailers and marketers with an opportunity in “Aduating” their consumers as well as changing their customers’ purchasing behaviors in a ubiquitous manner. The word “Aduating” implies the meaning of using advertising and other promotional media to educate target consumers. This concept becomes more significant in the digital era and information society. Consumers are no longer playing a passive role but looking for rich brand and product knowledge over the digital arena. However, what is an effective “aducating” approach for online and virtual business markets? Indeed, many researchers (e.g. Vitkauskaite, 2011) have indicated there is a new consumer segment has been created on the online and virtual retailing markets. It is important to note that the purchasing behavior of this new type of consumers is fundamentally different from before (Gatautis and Kazakeviciute, 2012). Traditional consumer purchasing behavior involves five linear stages, such as recognize, search, identify, purchase and evaluate. However, Batra and Holbrook (1990) have highlighted earlier about the importance of “consumer experience” during their purchasing process. It is crucial to consumers’ final decision-making.

In order to maintain an effective and long-term consumer learning process, retailers should pay particular attention on the use of these technologies as well as the pedagogical approach. Moreover, researchers (e.g. Li, Daugherty and Biocca, 2003) also highlighted the importance of “interactivity” in delivering consumer learning exercise. Based on this, our research team asked a fundamental question of how consumers’ behavior changed in an interactive consumer learning platform? Does it differ from the current social media approach? Are there any behavioral changes between interactive platform and social media in terms of consumers’ decision-making process?

On the other hands, the technological breakthrough in the interactive platform and mobile technologies provided retailers and marketers with an opportunity to deliver consumer learning process in a more hyperrealistic, simulated and game-based ways. Are these attributes in the interactive platform could possibly change the consumers’ learning process? This is the objective of this research and our research team is expected to deepen our understanding of the differences in the consumer learning process between the use of interactive platform and social media.

## **RESEARCH DESIGN**

This research adopted the meta-analysis method to investigate the impact of an interactive consumer learning platform in consumers’ learning process in comparison to currently used social media platform. Some of the key correlated factors have been investigated in able to understand consumers’ learning process, they are (1) three-dimensional (3D) virtual object interaction; (2) simulated experience; (3) interactive product/brand information; and (4)

game-based experience. The key objective of this research aims to deepen our understanding of how to implement an effective consumer learning practice and/or “Aduication” in interactive and simulated platforms by looking at the consumers’ behavior changes in perceived brand/product knowledge and decision-making process. This research applied a quasi-experimental approach to collect quantitative date for meta-analysis. This quasi-experimental approach aims to compare the control group and experimental group. In the control group, consumers are going to perceive brand/product knowledge and making purchase decisions from various social media platforms, whereas the consumers in experimental group is going to experience a designed interactive consumer learning platform called “ShopPlan 1.0” (See figure 1). Initially, this game-based interactive platform is developed by our research team to help retailers to design and allocate their merchandises effectively. In this project, this platform was used to help consumers (experimental group) to perceive brand/product knowledge and shaping their decision-making process. The game was slightly modified in order to fit the objectives of this project.



Figure 1. The designed Interactive consumer learning platform ShopPlan 1.0.

The experimental group is expected to experience the four key aforesaid attributes in interactive simulated environment that those consumers in control group will not be experienced. The duration of the data collection was one month with totally 12 hours. Two groups of consumers attended a 3 hours experiment on the interactive consumer learning platform and the social media platform separately. Upon the completion of the experiments, the consumers’ perceived brand/product knowledge (both groups) was examined by a 20-questions questionnaire with 5-Likert scale (5-point Likert-type scale 1=strongly disagree, 5 = strongly agree). The setting of the questionnaire involved four key indicators, they are (1) Brand Recognition (BR); (2) Brand Literacy (BL); Product Details (PE) and Product Differences (PD). Likewise, the four key consumers’ decision-making indicators would also embedded in the questionnaire, they are (1) Product Recognition (PR); (2) Product Search (PS); Product Identification (PI); and Product Purchase (PP). The aforesaid attributes in the interactive consumer learning platform are the dependent variables of this research. The two indicators were applied to calculate the overall effect size in the meta-analysis in order to deepen our understanding in the consumer learning process. To remove the bias of each biased effect size within two groups, the Correlation Factor Analysis (Hedges, Shymansky

and Woodworth, 1989) were applied. At last, the ANOVA method was introduced to study the heterogeneity of the dependent variables and effect sizes.

Regarding the sampling of this research, it recruited a same set of young consumers in the age group 18-25 for both groups. The sample size is 40. The Purposeful Sampling (Patton, 1987) and the Criterion-based selection (LeCompte and Preissle, 1992) were applied to select appropriate participants. Gender was mixed in both groups.

## ANALYSIS AND DISCUSSION

This empirical research focused on the consumers' learning process and their behavioral change in an interactive consumer learning platform. Emphasis is placed on consumers' brand knowledge requisition and decision-making behavior. Table 1 showed the EIGHT independent effect sizes and their comparison between the interactive consumer learning platform and traditional social media platform. The overall weighted mean of effect size is 0.14 (SD=.57). The sampling mean is 44.6 (SD=12.9). The standard deviation is 2.61. The average effect size of brand knowledge indicator "Brand Recognition (BR)" is 0.48, which is the highest scores in these eight effect sizes. The lowest score is the independent variable "Product Difference (PD)", which is 0.09. Regarding the Consumers' decision-making indicators in Section 2, the two higher scores are "Product Recognition (PR)" and "Production Identification (PI)" with the effect sizes of 0.42 and 0.43 respectively. The two lower scores are the variables "Product Search (PS)" and "Product Identification (PI)" with the average effect sizes of 0.09 and 0.07 respectively.

Section 1: The Brand Knowledge Indicators		Section 2: The Decision-making Behavior Indicators	
Variables	Average Effect Size (Experimental & Control Group)	Variables	Average Effect Size (Experimental & Control Group)
Brand Recognition (BR)	0.48	Product Recognition (PR)	0.42
Brand Literacy (BL)	0.3	Product Search (PS)	0.09
Product Details (PE)	0.31	Product Identification (PI)	0.43
Product Differences (PD)	0.09	Product Purchase (PP)	0.07

*Table 1. Mean unbiased effect sizes (by variable)*

The second table 2 indicated the unbiased effect sizes according to the aforesaid FOUR key attributes in the interactive consumer learning platform. All the effect sizes of these attributes, according to Cohen's Threshold for marginal magnitude, is below 0.50. There is no significant difference has been found between levels of variables at the alpha level of 0.01.

Attributes in the Interactive Learning Platform	ANOVA Alpha Value
3D Virtual Object Interaction (VI)	0.410
Simulated Experience (SE)	0.398
Interactive Product/Brand information (PB)	0.354
Game-based experience	0.409

*Table 2. The alpha value of ANOVA analysis*

The sample variance of the investigated attributes is 0.436, and the between-study variance is 0.398 in this meta-analysis. The overall effect size is 0.14 with the standard error of the weighted average 0.12, which is a small positive result. Therefore, a small positive effect size has been found. This result indicated that the interactive consumer learning platform is not particularly effective in comparison to social media platform. Based on the quantitative data extracted from 40 samples in this study, the overall effect size for the experiment group is the small positive of 0.14. The weighted effect size is between -1.032 to 1.378 with the

confidence interval of 95%. It is important to note that, there is no significant difference is found regarding the perceived brand knowledge in both groups according to the consumers' brand knowledge indicators. Thus, the result could conclude that the attributes in the interactive consumer learning platform is not expected to be crucial in consumers' purchasing process. In other words, consumers experienced a similar consumer learning process in both interactive learning platform and social media.

## CONCLUSION AND IMPLICATIONS

This study aims to find out the differences between the use of an interactive consumer learning platform and social media in relation to consumer learning process. This small-scale empirical research examined two key indicators, they are the brand knowledge indicator and decision-making indicator. The research team is expected the new type of interactive consumer learning platform could make changes to the current social media platform in consumers' learning processes. Surprisingly, the result indicated that the four key attributes in the interactive platform, which are the 3D virtual object interaction, simulated experience, interactive product/brand information and game-based experience, are not significantly effective in the entire consumer learning process, their perceived brand/product knowledge and decision-making process. The result implied that consumers' learning process is not affected by these two key technological platforms. It is important to note that, the both interactive consumer learning platform and social media are equally effective in consumer learning practices.

To conclude, the interactive consumer learning platform has small impact on consumer learning practice empirically. One of the reasons behind is, nowadays consumers are more eager to acquire brand or product knowledge from all kind of digital platforms. The platform itself might not be so different to them. The consumers' decision-making process is one of the crucial studying areas in this study, the result showed no significant difference between these two platforms. This result echoed to some studies (e.g. Marsden, 2011) that the consumers' decision-making process has been changed from a linear form to a more complex and interwoven way. Nonetheless. The use of interactive platform and/or game-based environment is one of the effective brand communication and consumer learning platforms to deliver "Aducation". This study provides retailers and marketers with an authentic case of exploring the use of interactive learning platform in consumer learning. In addition, the tremendous development of 5G (5 generation) communication technologies in the nearly future, the powerful bandwidth, wifi connection, mobile technologies and virtual reality are potentially bringing consumer learning practices and "Aducation" in a completely whole level. There are THREE major topics should be addressed in the further studies, they are (1) the both theoretical and technological frameworks of designing interactive consumers learning platform; (2) the pedagogical strategies of consumer learning practices in digital worlds; and (3) the consumers' learning experiences and expectations in interactive platforms.

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