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Graduate Research SYMPOSIUM
Bringing the University and Community Together

Showcasing research by
Biology, Chemistry, Business, Engineering, English,
Nursing and History Master’s students

GRADUATE RESEARCH SYMPOSIUM
April 18, 2014
Occhiato University Center

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10 am, 11 am, 1 pm

Poster Presentations:
11:30 am - 1:30 pm

Keynote:
12:15 pm - 12:45 pm

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About the Graduate Research Symposium

The mission of the Symposium is to create a forum for the dissemination and discussion of scholarly ideas between graduate students and with the local community. The second annual Symposium showcased the scholarly works of select graduate students from the Biology, Chemistry, Business, Education, Engineering, History, and Nursing programs.

The symposium was hosted by the Regional Access to Graduate Education (RAGE) program, which seeks to support graduate students in their research and scholarly works at Colorado State University-Pueblo, and by the university’s Graduate Studies Board.

About the Proceedings

These Proceedings are comprised of a sampling of the papers presented at the 2014 Symposium.

Acknowledgements

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Kristy Proctor
The Application of Augmented Reality Technology in the Apparel Industry

Becky Kirembu, Business

Becky Kirembu is a full-time international MBA student. She participated in the Graduate Research Symposium in order to refine her research skills and plans to undertake her doctoral studies in the near future.

Abstract

Augmented reality applications provide a platform for enhancing a user’s existing environment by supplementing reality with digitally enhanced inputs such as sound, video, or graphics. Furthermore, retailers are increasingly adopting augmented reality as a channel to reach out to customers and improve revenue. This research aims to explore the application of augmented reality in the apparel industry. A case study of three apparel stores including Uniqlo, H&M-New York, and Bloomingdale’s, has been conducted to explore the current usages of various augmented technologies. The comparison of different applications and the discussion of advantages versus disadvantages of augmented reality technology have been performed afterwards. The findings suggest that augmented reality technology revolutionizes the retail industry by enhancing customer shopping experience and improving customer confidence in products. Furthermore, augmented reality applications may have the potential to become powerful sales tool in the apparel retail industry in the future.

Keywords: augmented reality, apparel retail industry
The Application of Augmented Reality Technology in the Apparel Industry

The brick-and-mortar retail business particularly in the United States is seemingly in trouble because of a decline of foot traffic that is indicative of a shift in consumer purchasing behavior (Walker, 2014, para. 1). Increasingly, consumers are finding online stores to be more convenient than in-store shops. The ease of access to product and price information, product reviews, and free shipping are some of the key reasons that a number of consumers are choosing to purchase their products online (Walker, 2014, para. 1). Furthermore, ComScore reports that in 2013 online sales went up by 10% during the holiday season, and moreover online retailers continue to experience continued growth of sales (as cited in Walker, 2014, para. 4).

However, despite the grim statistics, all is not lost for brick-and-mortar retailers because they are employing creative solutions such as augmented reality to fight back, and get customers to purchase their products in-store. Bodhani (2013) argues that in-store retailers are employing augmented reality to: create a rapport with consumers, revamp the consumer’s overall shopping experience, and generate more sales (para. 2). Furthermore, Holden (2014) predicts that by 2015 augmented reality applications are likely to generate sales of $1.2 billion (para. 1). Thus the solution of employing augmented reality to increase foot traffic in brick-and-mortar stores is viable.

In addition, augmented reality applications have the potential to bridge the gap between in-store and online shopping experiences thus compelling customers to visit the physical stores (Bodhani, 2013, para. 1). The in-store augmented reality applications mimic online stores by allowing consumers to: share information on social media, increasingly interact with a product, and obtain useful product information and suggestions (Bodhani, 2013, para. 2).

This study addresses the apparel retail sector because of two key reasons: the adoption of augmented reality is more evident in the apparel retail trade, and secondly, the apparel industry
contributes significant revenues to the United States’ economy. Furthermore, the research paper will endeavor to examine how brick-and-mortar apparel retailers are employing augmented reality technology to differentiate their customer shopping experience, and narrow the gap between online and in-store apparel stores. By doing so, the aim is to contribute towards an in-depth understanding of the use augmented reality application in the apparel retail sector.

Having outlined the scope of our research paper in this section the rest of the paper is as follows: we will have related studies in section 2 to uncover gaps and obtain new insights of our problem analysis; section 3 will encompass our case studies conducted on three apparel retailers: UNIQLO, Bloomingdale’s and H&M; section 4 is a discussion of current applications, opportunities, challenges, and recommendations; and lastly the conclusion will be presented in section 5.

**Literature Review**

The Economic Review (2013) defines augmented reality as a category of virtual reality that employs graphics, sound, and video to supplement the real word environment, and enhance the user’s awareness of the world around them (p. 56). Augmented reality as a concept has been around for two decades, and its adoption was mostly confined to the spheres of military and science. However, with the advancement of smart phone technology an increasing number of commercial firms are embracing the implementation of augmented reality technology (Geroimenko, 2012, p. 448).

It is interesting to note that presently, the classification system of augmented reality is constantly altering, because augmented reality technology keeps progressing (Geroimenko, 2012, p. 448). However, Geroimenko (2012) categorizes augmented technology into a sensory based classification system namely visual, haptic, gustatory, olfactory, and audio augmented reality (p. 448). Please see Table 1 below.
Applications that employ augmented reality are further classified into recognition-based augmented reality and location-based augmented reality applications (Geroimenko, 2012, p. 450). (Walker, 2014)
Table 2

*The classification system of applications that employ augmented reality*

<table>
<thead>
<tr>
<th>Classification</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recognition</td>
<td>Recognition augmented reality applications employ markers</td>
</tr>
<tr>
<td>Location</td>
<td>Location based reality applications employ markless augmented technology</td>
</tr>
</tbody>
</table>

Table 2 Source: Geroimenko, 2012, p. 448

Geroimenko (2012) defines an augmented reality marker as an uncommon arrangement of a realistic world image that is captured by an augmented reality camera, and identified by augmented reality software (p. 449). Moreover, augmented reality markers provide a reference point that delineates the location and scale of an augmented reality object in the real world (Geroimenko, 2012, p. 449).

Navigation, shopping, marketing, and the health sector are some of the general fields that adopt the use of augmented reality technology (Economic Review, 2013, p. 56). The Economic
Review (2013) cites the Nokia City Lens, a smart phone application, as an example of navigation augmented reality technology that employs a camera to highlight points of interest of a user’s environment (p. 56). In addition, augmented shopping assistance applications enhance the customer’s shopping experience by allowing customers to try out apparel wear virtually in any place (Economic Review, 2013, p. 56). The AXE (LYNX) commercial went viral in 2011 because the firm employed augmented reality technology for their campaign. Huge screens, placed in a railway station, replicated the traveller’s images as angels, thus creating a huge buzz (Economic Review, 2013, p. 56). The fields of medicine and education employ the use of augmented technology because sensory inputs such as graphics, video, and audio enhance interaction and visualization (Economic Review, 2013, p. 57).

Bodhani (2013) argues that retailers are employing augmented reality technology to replicate the ease of online shopping, and make offline shopping more appealing to potential customers thus bridging the gap between online and offline shopping (p. 46). Increasing customer rapport, increasing sales, and revamping the customer experience are some of the crucial objectives that retailers are hoping to achieve by incorporating augmented reality (Bodhani, 2013, p. 46).

Kramer (2011) argues that retail industry experts forecast that a significant number of retail shops in Europe and North America will be shutting down by 2018 due to an increasing growth of online apparel sales that is growing by double digits over the next decade thus heavily impacting bricks-and-mortar sales (Kramer, 2011, para. 2). In addition, the Economist (2013) cites that last year in just two weeks five retail stores in Britain with a combined turnover of £600 million became defunct because of sales shifting to online vendors like Amazon (para. 1). Furthermore, Banay (2007) argues that according to research conducted by Forrester, online
apparel sales are increasingly rising by 21 percent, and that brick-and-mortar retailers are starting to feel the heat (para. 5).

The use of smart phones, the magic mirror, window displays, and augmented reality magazines are some of the applications that apparel retailers are increasingly employing to engage their customers. Retailers are increasingly adopting smart phone augmented reality applications that give customers instant information about promotional offers or product information as they walk along an aisle (Warner, 2012, p. 12). Top Shop, an apparel retail outlet in the United Kingdom, employs the use of the magic mirror in its virtual fitting room. The magic mirror allows one to fit their clothes by using hand motions. In addition, the mirror superimposes the shopper’s body. The unique thing about the mirror is that it allows one to have a frontal and rear view of the mirror (Sterling, 2011, para. 3). New Look, a UK based retail apparel store, in conjunction with Blippar, a leading mobile augmented reality provider, created an augmented reality window display to launch a celebrity’s cosmetic products in 2012. Shoppers were able to download the augmented reality mobile application which was featured on the window display and virtually try on the products displayed (Bodhani, 2013, p. 47).

Guvens, et al (2009) examines and presents the implications of social mobile augmented reality in the retail industry. Furthermore, consumers are increasingly relying on social content to make purchase decisions, and augmented reality applications have the ability to generate social content into the physical world to facilitate decision making (para. 1).

Warner (2012) presents smart phone augmented reality applications as a technique for retailers to personalize the customers’ shopping experience at retail stores (p. 12). Warner (2012) cites an example of Walmart customers employing their smart phones to participate in a scavenger hunt activity as a promotional gimmick. Furthermore, the author recommends that retailers should strive to keep up with augmented technology, because according to Juniper
Research consumers are likely to download over 2.5 billion smart phone augmented reality applications per year (as cited in Warner, 2012, p. 13).

However, there is potential for bricks-and-mortar retail stores to remain profitable despite experiencing a decline in sales and market share because of online shopping (Economist, 2013, para. 7). Furthermore, Withers and De Judicibus (2013) argue that retailers are creating innovative solutions such as the use of augmented reality to differentiate the customer service experience by drawing in the online experience inside the physical store (para. 2).

Based on the related studies examined this paper has uncovered a gap on studies of how apparel brick-and-mortar retailers are employing augmented reality to fight against the onslaught of online sales, and bridge the gap between in-stores and online stores. This paper will therefore make an attempt to bridge that gap and come up with new insights in the sphere of augmented reality technology employed in apparel retail industry.

**Case Studies**

**UNIQLO: Employing the Use of the Magic Mirror**

Uniqlo – San Francisco, a Japanese retail apparel store, has employed the use of the magic mirror to create a unique shopping experience for its customers. The shoppers can change the color of their outfits without having to physically don them. The shoppers only have to touch a button on their mirror to get a taste of virtual experience (as cited by Tate, 2012, para 2).

The use of the “virtual dressing room” is part of Uniqlo’s strategy to increase their revenues to $50 billion by the year 2020. The company’s CEO, Yanai, believes that the apparel industry is about chasing trends and not continuously improving the traditional business approaches. This approach has made the apparel retail outlet to be amongst the top compared to its peers (as cited by Tate, 2012, para 2).
**How the magic mirror works.** The magic mirror can be classified as visual augmented technology which comprises of a Kinect engine, and a large color monitor display (Drug Store News, 2012, p. 4). The display projects an image, and the customer can look into the display, and make various selections of apparel in different styles. In addition, an iPad application allows customers to adjust the colors available from the apparel palette. Moreover, the iPad application can allow the customer to post the picture on social media namely Facebook or send an email (Brown, 2014, para. 4).

**Impacts of the magic mirror in the store environment.** Paco Underhill, the author of *Why We Buy*, goes on to say that apparel in-store retailers lose majority sales in the dressing rooms (as cited in Mendez, 2007, para. 1). The magic mirror does provide an opportunity for brick-and-mortar retailers to prevent further loss of sales in their stores. Furthermore, magic mirrors offer in-store retailers the ability to revamp the overall in-store customer experience (Banay, 2007, para. 5). For example, the interactive magic mirror allows customers to virtually try clothes and share their experiences via social media thus successfully replicating a feature of online stores. Conversely, friends of the customer can also send suggestions to the mirror via social networks (Shankar, Carpenter, Farley & Hamilton, 2012, p. 213). As a result, the interactive augmented mirror provides support for the consumer to conduct purchasing decisions quickly by facilitating feedback from friends or family via social media (Shankar et al., 2012, p. 213).

In addition, the magic mirror is beneficial for consumers because it has the ability to make suggestions regarding potential and related purchases, and in some cases the magic mirror may mimic an online store by offering further product information to support the customer to make purchase decisions (Banay, 2007, para. 2).
Magic mirrors possess a feature called a database of consumer intention; this is mostly a feature of online retail stores that in-store retailers can take advantage of. According to Banay (2007), magic mirrors do have memory and recalls the clothing preference of a customer, and based on this invaluable feature apparel retailers can upsell or push more expensive designer apparel (Banel, 2007, para. 5). Furthermore, the database feature can allow in-store retailers to keep track of what apparel sells and what doesn’t thus enabling them to make merchandizing decisions with complete ease (Banel 2007, para. 6).

Banel (2007), points that in 2006 retailers lost $13.3 billion dollars because of shoplifting, and Infosys, a company that designs magic mirrors claim that their magic mirror has the ability to deter theft. For example, the mirror will send out an instant alert to attendants if a customer that buys apparel for an average of $100 suddenly picks out expensive merchandise (para. 7).

The augmented mirror provides convenience to customers especially if they are busy. For instance, customers can conveniently try out a succession of virtual apparel without having to don them physically (Shankar et al., 2012, p. 213).

**Bloomingdale’s – New York: Employing Augmented Reality Window Displays**

In 2012, Bloomingdale’s – New York employed visual augmented reality technology in their six window displays to let people try on sunglasses without getting into the store. The shades were projected onto onlookers who simply stood inside the window. In addition, users tried out various designer sunglasses by tapping different icons on the window screen (Salamone, 2012, para. 9). The augmented reality window display provides a platform, similar to online stores, for in-store retailers to engage with window shoppers and possible translate their interactions to purchases.
How the augmented reality window displays works. The augmented reality window display can be classified as a visual technology based on the sensory based augmented reality classification system. Furthermore, it is a type of optical-see through display. Kiyokawa, Kurata and Ohno (2000) cite that an optical see-through display allows a user to view virtual images or graphics in a real world environment through a see through display such as a mirror (p. 61).

The augmented reality window display technology comprises of LCD (liquid crystal display). The LCD screens locate a user’s eyes when they look into the screen, and it takes a few seconds for the glasses to appear in the customer’s face. However, the only challenge presented at the time is that the technology worked on people who were 5 feet 4 inches (Salamone, 2012, para. 14).

In addition, the augmented window displays consist of touch screen icons that facilitate users to make various selections and try on the wares that are available. The customer can turn in any angle and see how the merchandise looks on them (Situated Research, 2012, para. 7).

Moreover, a customer can download their images straight onto their cell phones and receive some discounts if they purchase merchandise in the store. Additionally, there is a print button if customers decide to purchase the sunglasses. Once the customer activates the print button a salesperson inside the store receives a picture of the customer and is on standby to help the customer when they go to the store to conduct a purchase (Miller, 2012, para. 6).
Impacts of the augmented window display in the store environment. Interactive window displays provide a fun and interactive way for customers to make a purchasing decision, and thus augmented window displays have the potential to help apparel retailers to close a sale. Klimkowski, Bloomingdale’s operating vice president, says that the interactive window display will give the customer’s a chance to interact with the product, and hopefully pop into the store to purchase the merchandise (as cited in Miller, 2012, para 4).

Augmented window displays are convenient for busy customers because they do not have to walk into a shop to try on the merchandise (Situated Research, 2012, para. 1).

Moreover, the augmented technology provides a platform for consumers to playfully interact with the products, and in addition there is no pressure from sales attendant to purchase the wares (Situated Research, 2012, para. 19).

H&M: Employing Location-Based Marketing through the Use of Smart Phones

In 2010, H&M-New York launched a promotion to virtually showcase its Fall/Winter collection that facilitated iPhone users to interact with and take photos of virtual H&M apparel in any of the fashion retailer’s Manhattan stores in New York. Users instantly received a discount by snapping a picture, and furthermore, users were able to virtually try outfits from their smartphones and post the images to Facebook (Sterlin, 2010, para. 8).
**How the augmented reality smartphone application works.** The augmented phone applications that are employed by smart phones can be classified as location based augmented applications. Metz (2012) cites that augmented reality smartphone applications employ a GPS (Geographic Positioning System), accelerometer and compass to locate a user’s position. In addition, the application may locate other nearby smartphones that have the same application to determine what the other users are viewing (para. 7). Moreover, augmented reality applications utilize the camera from the smartphone to place virtual graphics in front of the phone (Cappel, 2013, p. 54).

The H&M-New York promotion employs a location based augmented reality phone application that facilitates iPhone users to visit any of the retailer’s 10 Manhattan stores and interact with and take pictures of virtual H&M outfits featured on the shop display (Tsirulnik, 2010, para. 2). Furthermore, consumers can post those photographs on social media sites such as Facebook. The location based application is run via the GoldRun platform that allows the retailer to easily modify the content (Tsirulnik, 2010, para. 4).

Augmented reality applications also employ the smartphone’s sensitivity to motion. MEMS-based accelerometers, gyroscopes, and magnetometers are all devices that are found in smartphones, and thus facilitate the phone’s sensitivity to motion. Furthermore, the sensors located inside the smartphone help it to pinpoint its exact location, and thus acting as a platform for location based augmented reality applications (Walker, 2012, p. 12).

Impacts of the augmented reality smartphone application

Szymczyk (2009) argues that while mobile augmented reality is revolutionary, there are still some key challenges to be countered. For example, at the moment, the smart phone technology is not sufficient enough to support advanced augmented reality applications (para. 3).
It is interesting to note that it is estimated that the number of smartphone augmented reality users will increase by roughly 200 million by 2018 (Holden, 2014, para. 6). Furthermore, Ms. Rao, the vice president of GoldRun, estimates that smartphone usage is eventually going to replace computer usage in the future. Thus retailers are aggressively seeking new ways to engage smartphone users, and thus H&M’s tactic is to market their brand through the buzz effect, create entertainment for the customer, and revamp the overall customer service experience (Tsirulnik, 2010, para. 9).

Cappel (2013) argues that the use of augmented reality smartphone applications is a novel way to engage customers with a brand, thus creating a rapport with the customer. In addition, the augmented mobile phone application gives retailers the allowance to carry out market segmentation based on the customer’s demographics. For instance, two people could point out their smartphone at a billboard and receive different advertisements based on their buying behavior and demographics (p. 55).

Furthermore, location based smartphone augmented reality applications have the potential to provide a detailed analysis of consumer purchase behavior (Tsirulnik, 2010, para. 9).

Smartphone augmented reality applications are convenient for customers because they assist them to make purchasing decisions swiftly by providing additional information or enabling users to share their pictures via social media enabling friends or family to make decisions or give feedback.
Table 3: A summary of the impacts of the magic mirror, augmented window display, and smartphone augmented application in the store front

<table>
<thead>
<tr>
<th>In-Store Augmented Application</th>
<th>Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Customers can virtually try clothes and share their experiences via social media.</td>
</tr>
<tr>
<td></td>
<td>The mirror comprises of a database of consumer intention</td>
</tr>
<tr>
<td></td>
<td>The mirror assists in-store retailers to keep track of inventory.</td>
</tr>
<tr>
<td></td>
<td>It is convenient for busy customers</td>
</tr>
<tr>
<td></td>
<td>It makes suggestions regarding potential and related purchases</td>
</tr>
<tr>
<td></td>
<td>Deters theft</td>
</tr>
<tr>
<td>1. Magic Mirror</td>
<td>Provides a fun and interactive way for customers to make a purchasing decision</td>
</tr>
<tr>
<td></td>
<td>Convenient for busy customers because they do not have to walk into a shop to try on the merchandise</td>
</tr>
<tr>
<td></td>
<td>Provides a platform for consumers to playfully interact with the products</td>
</tr>
<tr>
<td>2. Augmented Window Display</td>
<td>Novel way to engage customers with a brand</td>
</tr>
<tr>
<td></td>
<td>Can provide a detailed analysis of consumer purchase behavior.</td>
</tr>
<tr>
<td></td>
<td>Providing additional product information and enables users to share their pictures via social media</td>
</tr>
<tr>
<td>3. Augmented smartphone</td>
<td></td>
</tr>
<tr>
<td>applications</td>
<td></td>
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</tbody>
</table>
Discussion

Macy’s in New York is employing augmented reality applications in an effort to generate more revenues according to their CEO, Terry Lundgren. The augmented reality mannequins will change apparel according to the weather, and in addition, customers will be able to adjust the mannequin’s outfits (Lutz, 2012, para. 1).

Cymplifi, a startup business, has created an augmented reality application that eliminates the need of users going to the fitting room by allowing users to try outfits via the use of their smart phones. Furthermore, the users can share the pictures of the items to be purchased via social media. However, the first version is only available to customers with Apple products (Jackson, 2014, para. 1).

The Churchill Square Shopping Center in United Kingdom was able to showcase its first virtual fashion show for its Spring and Summer collection 2014 via a smartphone augmented reality application. The director of the shopping center deemed the use of smartphone augmented reality to launch the virtual fashion show as the perfect technique to create a buzz effect (Jackson, 2014, para. 2).

Sportsgirl, an Australian apparel retailer, is employing augmented window display to enhance customer interaction. The retailer’s quarterly magazine will be showcased on the store’s windows. In addition, the retailer will showcase three separate films on its windows (Jackson, 2014, para. 1).

Opportunities and Limitations of Augmented Reality Applications

Opportunities

Augmented reality applications such as smart phone augmented reality applications and virtual dressing rooms have the ability to provide product information and recommendations. These features, which were mostly inherent in online stores, are very important because they
assist consumers to make purchase decisions. Markus and Olsson (2011) support this notion by noting that brick-and-mortar stores that employ augmented reality applications ease their customer’s purchase decision process via provision of product information and recommendations provided by augmented reality applications (p.77).

Augmented reality applications provide in-store retailers with novel ideas to revamp their overall customer experience and brand engagement in their stores. According to the findings outlined by Markus and Olsson (2011), the customers’ curiosity led them to download augmented reality applications. Furthermore, interviewed customers regarded augmented reality applications as rich, compelling and interactive (p. 82).

Limitations

At the moment, slow user acceptance of general augmented reality applications is a key challenge that adversely impacts the adoption rate of retail apparel augmented reality applications. Azuma et al. (2001) argues that consumers are familiar with the concept of augmented reality applications because of the media. However, the technology has not been widely accepted by users (p.43). Furthermore, the authors Markus and Olsson (2011) conducted an online study about the user acceptance rates and customer experience of smart phone augmented reality applications that exist in the market, and their findings regarding acceptance rates of augmented reality applications were mixed, mostly because of some challenges of augmented applications. For instance, the irrelevance of content provided was one such challenge (p. 83).

As discussed earlier, Szymczyk (2009) pointed out that smartphone technology is not fully sufficient to support augmented reality applications (para. 3). Markus and Olsson (2011) also agree with this notion by calling attention to the fact that the full potential of augmented reality has not been realized because developers need to formulate more tangible benefits that are
practical in nature. Moreover, user adoption rates increase in the product diffusion stage when people attach more weight to logical aspects of a novel technology (p. 83).

Privacy and security concerns are potential challenges that are likely to be faced by users of augmented reality applications. For example, the authors Roesnre, Tadayoshi and Molnar (2014) point out a security risk posed by malicious programs that may cause harm to smart phone augmented reality users by creating sensory overloads that lead to physical impairment (p. 91). In another instance, smart phone augmented reality applications that require GPS data are at risk because malicious applications could pinpoint the location of users thus breaching their privacy (Roesnre, Tadayoshi & Molnar, 2014, p. 91).

**Recommendations**

Markus and Olsson (2011) note that augmented reality developers need to formulate more tangible benefits for the customers that are practical in nature so that retailers can quickly translate the technology into sales (p. 83). Traditional marketing strategies such as storytelling may be incorporated into augmented reality applications as a technique to assist retailers to establish a rapport with their customers, and increase their sales in the long run. Buzbee (2013) cites that superb stories often compel powerful emotions, and it is a clever gimmick of promoting brands, products or services (para. 1). Additionally, retailers can employ solution selling techniques via augmented reality applications to increase their revenues. For instance, mobile augmented applications have the ability to segment customers based on their demographics thus retailers can incorporate solution selling to analyze the customers’ needs and recommend products tailored to cater to those specific needs.

There is increasing pressure for brick-and-mortar apparel retailers to seek creative means to engage with busy consumers. In the future, developers should add a point of sale feature for the magic mirrors and augmented window displays so that customers can directly purchase the
wares from the augmented devices thus saving the customer’s time. For example, Kate Space Saturday in New York is employing augmented reality window displays to facilitate customers to make purchases via the window displays on items displayed via a touchscreen panel on the window display (Thau, 2013, p. 14).

In future, brick-and-mortar stores will have to reinvent themselves into exhibitions that provide additional product to customers in an entertaining and engaging manner. In addition, retailers should innovatively seek ways to generate more sales via customer interaction with friends or families or brands on social media sites (p. 14). For example, C&A is an example of a Brazilian apparel retail chain that is in the process of employing augmented reality clothing hangers in the future that will digitally display the number of likes on real-time that a merchandise has obtained from Facebook. The idea is that the merchandise with the most likes may translate into higher sales (Thau, 2013, p. 14).

Lastly, augmented reality developers ought to capitalize on the “selfie culture” craze that is currently trending. For example, the developers should develop a smartphone augmented reality application that incorporates the use of a user’s “selfies” to try on virtual apparel from various retailers, and additionally the application should allow the users to purchase the apparel directly and share their results on social media. This gimmick provides an exciting way for customers to interact with an apparel retailer’s brand and ultimately this may lead to an increase in sales.

**Conclusion**

The use of augmented reality in the apparel industry has enabled in-store retailers to narrow the gap between online and in-store apparel stores, and at the same time, provide entertaining and interactive means for customers to interact with their brands, thus compelling customers to visit their stores. Conversely, it is still too early to determine the impact of
augmented reality applications on sales and revenue because the technology is still in the adoption stage, and not many brick-and-mortar apparel retailers have adopted the technology yet. Furthermore, there are a few concerns that developers need to address such as privacy concerns of devices such as the magic mirror or the smartphone augmented applications. Furthermore, retailers need to work on increasing the practical uses of the technology so that the adoption rates may increase. However, if apparel retailers implement augmented technology wisely they may gain significant gains because as established earlier in the paper the augmented application market is growing steadily over the next few years. In future, research study conducted will focus on how augmented reality technology has impacted and changed the purchasing behavior and patterns of consumers in brick-and-mortar stores.
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Thinking about Art: The Impact of Teachers' Understanding of Questioning Strategies on Student Thought

Kristy Kreider

Kristy Kreider is completing her Master's degree in Education with an emphasis in teaching English as a second language.

Abstract

An action research study was conducted in an elementary afterschool art program taught by CSU-Pueblo education students enrolled in an Integrated Methods class to determine whether teaching preservice teachers how to use higher order questioning strategies would affect their questioning and student critical thinking. One group of teachers was taught specific strategies for using higher order questions during weekly lesson planning meetings. These strategies include how to phrase open-ended questions, preparing questions while planning, using follow up questions to scaffold thinking, and using wait-time of 5-10 seconds to allow students time to think before answering. Recordings of teacher questions, teacher surveys, and an assessment of the critical thinking answers of students after the intervention were used to show whether an increase in teacher education about questioning impacted the critical thinking of students. Results show a 42% increase in student higher order answers to questions. Teaching questioning strategies to teachers may boost the critical thinking of students in afterschool programs.

Keywords: action research, critical thinking, teachers, questioning strategies
Thinking about Art: The Impact of Teachers' Understanding of Questioning Strategies on Student Thought

Often, studies of questioning begin by mentioning Socrates. It is his method that launched the discussion about the value of questions to fuel student though. It is a historic and still-relevant strategy that can be used in all classrooms. In art classes, students often are encouraged to think about and discuss famous works of art as well as their own creations. Art teachers can help their students to think about and grow an appreciation for art through their questions and how they use them to guide their students to think critically about the arts.

History of Inquiry

I have been observing the start of a new afterschool program at Eva R. Baca Elementary school. The program, Adventures in Art, is focused in visual and expressive arts, but aims to integrate all other subjects. The hour and a half classes take place every Monday and the art focus varies weekly with some areas like drawing, photography, dance, and drama. The lessons focus on art objectives and integrate other subject areas as well as consistently incorporating thinking routines. Because Adventures in Art is a voluntary afterschool program, attendance varies weekly. New students may come that have not participated in previous classes, and some familiar faces from previous weeks may miss classes, and some may even leave mid class if their parents come early. There are five different classes in the art program, with children of similar age groups in classes together. Most of the students come from Kindergarten classes, with over 27% of the attendance of all 129 students enrolled by the program’s second week.

The students in the program all attend Eva R. Baca elementary in Pueblo, Colorado which is located in a neighborhood sometimes derogatively referred to as “Dog Pound” by locals. Eva R. Baca Elementary, though, has the distinction of being named after a beloved long-time teacher from the area who lived as a strong advocate for the children of Pueblo. It is a
relatively small school with only 323 students from Prekindergarten to 5th grade. The vast majority of the children in the school come from Hispanic families and according to the principal, Rosa Sáenz-Aragon, 90% of the parents of her students speak Spanish. While the school does have gym and music specials, they do not have an art program. So, it was exciting to see more than a third of the student body show up for the first session of Adventures in Art.

The elementary school is located near Colorado State University-Pueblo, and the afterschool program is being taught by an entire teacher education class. Every student in Ed 380, Integrated Methods, does their field work in this program and is observed weekly by three doctorate professors. Five groups of 4-5 graduate and undergraduate students collaborate to adapt integrative art lesson plans and teach in collaborative groups with separate roles. One student always video records the lessons, while the others team teach. Each group’s lessons are quite distinct, since they have a lot of creative license, but they all follow a similar main idea for the lesson and teaching objectives. Informed by the text, *Making Thinking Visible: How to Promote Engagement, Understanding and Independence for All Learners*, each class integrates routines for encouraging active thinking and understanding by the young art students.

As a new program, it has many challenges to overcome, but I have noticed that even as the class is designed around routines created specifically to encourage thinking, teachers struggle to actually get thoughtful answers from the students. For example, in one first and second grade group, the teachers used a See-Think-Wonder routine to help students think about a picture. The See stage went well; the children observed many aspects of the picture. When it came to the Think stage, though, students were much quieter. At this point, teachers started repeating “What does it make you think?” and soon were prompting, “Does that make you happy or sad?” At the end of the lesson, I had to ask a teacher what the Wonder part was because they never actually attempted it with the students. So while the routine is very useful to encourage thinking, teachers
quickly abandoned it when students were not easily engaged. They did not seem to know how to ask the questions or what kinds of questions to ask the students to encourage their thinking. Based on initial observations of the art program and the use of Visible Thinking strategies, I decided to focus my study on teacher questioning.

**Review of the Literature**

A seven year study of teacher questioning found that 76% of teacher questions to their students grades 3 to 12 are reproductive, or ‘lower order’ (Tienken, Goldberg & DiRocco, 2009). Tienken et al. (2009) define productive questioning as those questions that in thinking about and answering allow students to create, analyze, or evaluate. These are also known as higher order questions. The alternative to these are reproductive, or lower order questions, which ask students to imitate, recall, and apply. Likewise, in her study of third grade teachers in one district, Caulfield-Sloan and Ruzicka (2005) documented that prior to her intervention; nearly all were using low-end thinking questions and receiving only rote answers from their students. While there are questions used in classrooms that serve a variety of purposes such as classroom management, giving clues, checking vocabulary and topic understanding, and promoting student reflection on learning, it is troubling that the percentage used for promoting thinking is so low (Myhill & Dunkin, 2005). Caram and Davis (2005) argue that “Effective use of questioning arouses curiosity, stimulates interest, and motivates students to seek new information” (p. 20). So questioning is a highly engaging activity for students. In addition, an increased use of higher order questions is an incredibly valuable intervention because it has been shown to promote critical thinking and understanding in students (Dillon, 1988; Lovelace & Larson, 2013; Myhill & Dunkin, 2005; Smart & Marshall, 2012; Tienken et al., 2009; Tsui, 2002).

Several reasons for the low numbers of higher order questions used in schools have been proposed by researchers. One reason may be that often, teachers are reluctant to share control of
the classroom and open it up to allow students to answer higher-order questions (Caulfield-Sloan & Ruzicka, 2005; Larson & Lovelace, 2013; Myhill & Dunkin, 2005; Tsui, 2002). Pressure to cover large amounts of content lends itself to asking more factual, closed questions which may lead to direct and lecture-based teaching in which teachers simply recite knowledge to passive students (Caulfield-Sloan & Ruzicka, 2005; Myhill & Dunkin, 2005; Tsui, 2002). So in order to teach more content, teachers are hesitant to devote classroom time to in-depth discussions by students which are more difficult to control and less timely than lecture. In a class where a teacher is willing to relinquish some control to students and encourage discussion through questioning, the classroom environment plays a large impact. Smart & Marshall (2012) claim depending on the environment, the type of questioning used is different and gets different qualities of answers from students. Discussions should be conducted in a setting in which the teacher scaffolds and focuses the discussion without dominating it so that students speak at length, ask their own questions, and are guided by the teacher’s open questions (Soter et al., 2009). It is important to establish a class culture that promotes discourse and respect both among students and between students and teachers. The students also need to be taught what is expected of them in questioning and answering. “Teachers have the unique opportunity to facilitate higher cognitive levels in their students by the questions they ask during instruction and the communication pattern they establish in their classrooms” (Smart & Marshall, 2012, p. 265).

Thus, the teacher must create through modeling and structure an environment that supports student discussion and questioning. Though using questioning in a classroom is difficult, teachers often have never been formally taught how to ask questions that encourage higher order thinking (Caram & Davis, 2005; Zander, 2004). Instead of facilitating student thinking, teachers often ask questions for simple drills by asking questions that they have answers to already and that do not require speculation (Myhill & Dunkin, 2005). Myhill and Dunkin (2005) give an
example of this in which teachers are asking open questions without truly encouraging open
discourse or higher levels of thinking. In their example, the teacher asks her students “What is
spring?” but closes down their speculations by stating “Well, spring is a season” and thus ending
discussion and thought, and making the question closed (p. 424). Another example is of a teacher
asking her class “Is the poem just describing what it is like to go bare-foot on the beach?” where
it seems almost as if the teacher is encouraging thinking, but the question is framed in a way
where students are aware of the teacher’s expectations for an answer and can answer simply no
(p. 424). These kinds of questions imply that while the teacher asks open-ended questions she
does not understand how to use her questions to actually encourage her students to think
critically. As many teachers don’t know how to question and have not been trained in it, many
researchers urge for questioning to be taught to teachers (Caulfield-Sloan & Ruzicka, 2005; Gall,
1988; Smart & Marshall; 2012). In a research study by Caulfield-Sloan and Ruzicka (2005), a
control group of third grade teachers were given workshop education on how to use questioning
in their classrooms, then the researcher observed the classrooms of both groups. When students
were posed with an open ended question, the experimental group, whose teachers had been given
overt training in higher order questioning, answered with higher level thinking answers more
frequently than the control group. On a rubric measuring proficiency of answers, the control
group answered 90% partial and non-proficiently while the experimental group had 61.7%
proficient and advanced responses. Explicitly teaching elementary school teachers how to use
higher order questioning had an extremely positive effect on the types of answers generated by
students. It is also valuable for teachers to learn by observing other teachers who use questioning
effectively and by reflecting on their own questioning practices (Smart & Marshall,
2012). Observations of other teachers, self-reflection, and training are methods of teaching
educators how to use higher order questioning. In addition, there are many specific strategies
suggested by researchers that teachers can learn in order to apply higher order questioning more often in their classrooms and thus encourage student critical thinking. These include using Bloom’s Taxonomy to ask higher order questions and asking some questions which do not have a wrong answer (Larson & Lovelace, 2013). In order to use Bloom’s Taxonomy to ask questions, a teacher should consider the six cognitive domains and prepare questions that target different domains of thinking (Bloom, 1956). For example, a teacher may assess student understanding by asking “What is the main idea of the story?” or she may ask a question which asks a student to evaluate a painting by giving a critique. As this implies, preparing questions while lesson planning is an important strategy in itself. Planning questions in advance is a way to have a large number of questions prepared as it is difficult to ask a good number of high-quality questions if they are all generated randomly (Smart & Marshall, 2012; Tienken et al., 2009). Teachers may also prepare follow up questions. Some suggest asking questions in specific frameworks (Caram & Davis, 2005; Hannel, 2005). This involves scaffolding questioning so that students are given support for answering and thinking deeply. Ensuring all students have a chance to answer the questions, once asked, is very important as well (Larson & Lovelace, 2013; Tienken et al., 2009; Smart & Marshall, 2012). Teachers can do this by having students answer simultaneously using choral response or using signaled response which is a procedure where students visually display their answers such as with a thumbs up or thumbs down signal (Tienken et al., 2009). Students can also participate in think-pair-share activities in which after thinking individually, students discuss their answers with a partner and then select students share with the entire class (Tienken et al., 2009). Particularly complex questions may be answered by all students through written responses (Smart & Marshall, 2012). Another important strategy for teachers to learn is to wait 5-10 seconds for students to think about higher order questions (Caram & Davis, 2005; Larson & Lovelace, 2013). Wait time is important because teachers often give up on a question if it hasn’t
gotten a quick response, but students need time to think. Learning methods for questioning like these can help educate teachers to better use higher order questioning in their own classes.

In the Adventures in Art after school program, the teachers are themselves students at the university. Research indicates teachers’ lack of knowledge on how to ask higher order questions as a possible reason for why questioning is used infrequently or ineffectively (Caram & Davis, 2005; Zander, 2004) and several propose that educating teachers on questioning will increase teachers’ productive questioning (Caulfield-Sloan & Ruzicka, 2005; Gall, 1988; Smart & Marshall; 2012) Since these teachers have much less experience in general, and probably have never been taught how to use questioning effectively, in order to increase their understanding, they can be taught the need for and how to use higher order questioning. Teachers can be made aware of the value of questioning and self-regulate their teaching by learning about questioning strategies recommended by researchers.

**Research Question**

While questioning has long been an area of discussion in the education community, very little recent research has been done. Education has changed with time, cuts have been made to arts and music programs and there is an increasing demand on teachers to cover large breadth of material, discouraging teachers from taking time for discussing topics in depth. This leaves a large gap in research on the subject of questioning although it remains a relevant teaching strategy especially in the arts. With my action research I wish to answer how teaching preservice teachers in the use of questioning strategies affects the higher order thinking of their students in an after school art program.

**Data Analysis**

**Intervention**

For my action research plan, I met with the field experience teachers weekly during their
weekly lesson planning meetings. I talked with them about questioning strategies, reflected on their lessons with them, and prepared and used resources to teach questioning concepts. For the initial intervention, I had planned to meet with the field experience teachers in order to teach the strategies I had researched. Unfortunately, they canceled the plans the day we arranged and we were unable to meet in person. So, I created a PowerPoint as an outline to teach the various strategies, utilizing web resources on the strategies recommended in the literature review. These strategies include preparation, asking higher order questions, wait time, including all students, responding to students, and using follow-up and scaffolding questions. To teach these strategies, I used the research I collected for my literature review which described the strategies recommended, then I gathered additional information about these and supplemented the strategies with specifics on each from books, websites, and YouTube videos. I then each field experience teacher so they had all resources and information to refer to while planning as well. After sending this email, I received no responses. This method of teaching for me did not seem to be effective.

However, after this first post-intervention lesson was observed, I was able to meet with the teachers in person, explain my role as a researcher to them in more depth, and used the PowerPoint I created to facilitate a discussion about each of the strategies. Field experience teachers discussed their own questioning techniques and asked me questions for guidance in their own questioning in the classrooms. After the initial lesson, I met with them a second time that week while they planned their lessons. I did not bring new information, but I did print out one of the resources from the PowerPoint and answered their questions about using questioning in their lessons. After this, I met with them weekly during their lesson planning. I did not add any new strategies, I only continued to discuss them with the teachers and talk to them about ways to include the strategies in their teaching. They met for one hour a week, and after the initial
intervention, I only used about 10 minutes during their planning for questioning related
discussion.

Definition of Variables

There were some variables outside of my control in this study. I worked as a facilitator
between the elementary school and the university assisting with various tasks including helping
the teachers with setting up and cleaning up, maintaining accountability for the students in the
program, and assisting parents in picking up their children afterwards. So, I was involved in the
program myself and could be kept quite busy, especially near the beginning and end of the hour
and a half sessions. Field experience teachers also viewed me as another student and this may
have impacted their openness to receiving instruction from me. As mentioned earlier, the initial
meeting in which I planned to initially present my intervention was cancelled and I had to rely on
email to present a PowerPoint. This appear did affect the initial data collected as it more closely
reflects similar data from before the intervention.

Methodology

Sample

The Integrated Methods course had groups already established that worked with different
age groups of art students. The group I did my intervention with was selected by a professor of
the course. The group consists of 6 female students, all pursuing undergraduate education
degrees. The classroom they are in was also preselected and the students are grades kindergarten
to second grade. This classroom has had the most variation since the start of the afterschool
program due to changing attendance and a regrouping that dissolved one group and had students
merge into either this class or one other. 37 different students have been in the class, though
numbers and students vary weekly. On average, the class has about 10 students.

Assessments and Measures
In order to assess the field experience teachers’ questioning and the effects questions had on the critical thinking of the students, I observed teachers for short periods of time during their lessons and also video recorded to assist my observations. I did not evaluate all lessons in their entirety, but always observed during a portion of the lesson in which they used a visible thinking strategy called the Explanation Game. This is a strategy from the text Making Thinking Visible in which students are asked to name features the object the teacher has chosen to focus on such as a painting, then explain the features, and give reasons for their explanations and alternatives to those reasons (Ritchhart, 2011). I also observed at different points of the lesson to ensure that I observed different teachers leading the teaching. I recorded questions they asked of the students as well as prompts that acted as questions to encourage student thinking and answers. For example, the phrase “Tell me what you see in this picture” functions in the same way as the question “What do you see in the picture?” and I recorded such prompts as questions. This data allowed me to see how teacher questions changed throughout my intervention and gave context for analyzing student answers.

I developed a checklist using Bloom’s Taxonomy to assess the answers given by students to evaluate what level of thinking answers were. There are six levels of Bloom’s taxonomy and these are Remembering, Understanding, Applying, Creating, Evaluating, and Analyzing. As in the study done by Larson and Lovelace (2013), I evaluated the students using six categories, but for ease of analysis, later regrouped them into higher and lower order as in their study in which Remember and Understand were considered lower order and the others were labeled higher order. When students answered a question, I put a check mark in one of the six categories which I labeled with descriptors to assess my judgment. I used one row for each teacher question to assess how many students answered each question as well. I wrote down the teacher questions and the checklist on the same document and also left space for any comments or reflections.
about each question.

In order to observe the relationship between student answers and the questions asked of them, questions were assessed separately of the answers they induced. It is important to assess questions and their relationships to answers in order to determine the cause of student critical thought in the classroom and assess if and what quality of questions help generate student insight and critical thought. Student answers were scored on a checklist of the six Bloom’s categories of higher order thinking. Answers were assessed using Bloom’s six part scale, then evaluated in two categories, higher and lower. Four weeks were assessed, weeks 1, 2, 3, and 4 as discussed refer to the observed weeks 7, 9, 10, and 11 of university classes. The first data shown is before any intervention was done, the second was after the intervention was emailed, the third is after the first in-person lesson and intervention, and the fourth was after another in-person meeting. Later teacher questions were assessed using the same checklist to score the questions on the same scale so that the questions can be assessed for a correlation between teacher questions asked and the answers students give over time.

I also conducted a survey of the teachers I worked with asking them three questions: What do you feel you have learned about questioning this semester as a student? What have you learned as a teacher about using questioning in the classroom? And what impact do you think the questioning strategies we discussed have had on the students in the afterschool art program? The survey enabled me to see questioning from the teachers’ perspectives and make considerations my own observations may have overlooked.

Results

Answers

Table 1 in Appendix A shows the percentage of higher order answers by students. During week 1, of the 29 answers received by teachers, 24% were higher order. On week 2, only 21% of
the answers received were higher order. After week 3, 63% of student answers were higher order. On week 4, 51% were higher order. So, after the initial in-person meeting and intervention, the number of higher order answers rose 42% over the previous week.

On Chart 1 in Appendix A, the percentage of each category of question can be seen for each week in comparison to one another. For week 1, 45% of all answers of student answers were Remembering and 31% of the answers this week were Understanding. All of the higher order questions this week were in the realms of Applying, 7%, and Evaluating, 17%. Week 2 had similar results with 51% Remembering and 28% Understanding answers. The higher order responses this week however were 15% Creating and 5% Evaluating answers. After the initial in-person meeting, week 3 saw answers for the first time in all 6 categories of Bloom’s Taxonomy. This week 17% of the answers were Remembering and 20% were Understanding. Of the higher order categories, 19% were Applying, 7% Creating, 30% Evaluating, and 7% Analyzing. Week 4 saw a slight increase in the two lower order categories with 26% Remembering, and 23% Understanding answers, but there was also an increase in Analyzing answers which rose to 12%. This week there were 7% Applying answers, 6 % Creating answers, and 26% Evaluating answers as well.

Questions

Before any intervention was done, teachers were observed to have received higher order answers to 7% of the questions they asked. After the first in-person meeting and intervention was done, 53% of the questions teachers asked received higher order answers. On week 1, teachers asked students 52% Remembering questions, 15% Understanding, 4% Creating, and 30% Evaluating questions. On week 4, teachers asked questions from every area of Bloom’s Taxonomy. That week they asked 24% Remembering, 27% Understanding, 3% Applying, 5% Creating, 30% Evaluating, and 11% Analyzing questions.
The type of question asked impacted the type of student answer given as can be seen in Tables B1 and B2 in Appendix B. Higher order questions were shown to elicit more higher order answers. In week 1, 50% of higher order questions received higher order answers and 25% lower order and 25% no response at all. In the other weeks observed, higher order questions received an average of 78% higher order answers. Lower order questions every week received a majority of lower order answers. On average, in all four weeks, lower order questions received only 18% higher order answers and this occurred more often in the two weeks after I met with teachers during their lesson planning meetings. Teachers observed this pattern and noted it in their surveys.

Survey

Coded answers to the six field experience teachers’ surveys revealed patterns in value placed on what they learned, what specifically they learned, and the effect they felt it had on their students. Full responses for survey questions have been included in Appendix B. Teachers made statements evaluating what they learned. The five teachers who use terms which make judgments about questioning, indicate positive opinions about the use of the questioning strategies as they use terms that describe questioning or specific strategies as being important, beneficial, and helpful.

Within the surveys teachers indicated items they learned. The five teachers who specify specific things they learned all mention the level of question first. Three teachers specifically mention scaffolding, a strategy we discussed and I prepared a small lesson for. Four of the teachers made remarks indicating preparation as something they learned about questioning. BM indicates questions can be used for “creating richer content” and that she learned to “incorporate these questions into lessons” and three other teachers specifically mention preparing or planning as something they learned about using questioning.
Teachers discussed in the surveys the effect they felt their use of questioning had on their students.

Discussion

In one survey, a teacher wrote, “The students were able to understand why they said an answer and were actually able to start answering their own questions of yes/no [without] being asked.” Another wrote, “Asking the right questions allows students to discover concepts on their own.” After considering these statements, I looked at my observational data and noticed that every week the teachers begin the Explanation Game with a prompt that asks students what they see, hear, or notice. In every week this question receives answers that were ranked as Remembering. These answers typically just stated an item observable in a picture or heard in a song. In the last observed week, after viewing pictures of African masks, the teacher gives the same type of prompt. However, the student answering first notes something of the mask as usual, but then immediately follows up her own answer by making a judgment about the mask, which is an Evaluating type of thought process. So, it would appear that in fact, at least in this case, the student was a step ahead and was already thinking more deeply, as in the pattern the teachers had begun establishing. It had become a pattern that these types of answers would receive follow-up questions that probed for deeper thought such as in week 9 when a teacher asks after this initial question for the student to “Explain the bunny to me” or in week 10 after asking what students notice and receiving a shallow answer, the teacher followed up saying “Why do you say the Lion King?” This student had already begun to think about these things without being prompted.

Higher order questions asked still did receive some lower order answers. One reason may be on the part of the evaluator. Making judgments on answers takes decision making on the part of the researcher and more so in evaluating questions because it is necessary to make judgments about the intention of the question. It may also be due to confusion on the part of the student
either because the question is difficult to understand or out of context so the student doesn’t know how to respond as in the question asked on week 4, “What does art have in common.” It appears the teacher wishes students to analyze or compare art, but the question does not fully express what students are supposed to be comparing and does not come in the context of a comparison of other types of art.

BM writes, “Overall, I learned about questioning which is something I had never learned about, in this detail, as well as the importance of it.” This statement reflects the premise that teachers need to be taught strategies for using questioning.
References


## Appendix A

### Table 1

<table>
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<th>Week</th>
<th>Total Answers</th>
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<th>Lower Order</th>
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### Chart 1

**Student Answers on Bloom's Taxonomy**

- **Week 1**: 100% Remembering, 60% Understanding, 20% Applying, 0% Creating, 0% Evaluating, 0% Analyzing
- **Week 2**: 100% Remembering, 60% Understanding, 20% Applying, 0% Creating, 0% Evaluating, 0% Analyzing
- **Week 3**: 100% Remembering, 60% Understanding, 20% Applying, 0% Creating, 0% Evaluating, 0% Analyzing
- **Week 4**: 100% Remembering, 60% Understanding, 20% Applying, 0% Creating, 0% Evaluating, 0% Analyzing

**Teacher Questions on Bloom's Taxonomy**

- **Week 1**: 100% Remembering, 60% Understanding, 20% Applying, 0% Creating, 0% Evaluating, 0% Analyzing
- **Week 2**: 100% Remembering, 60% Understanding, 20% Applying, 0% Creating, 0% Evaluating, 0% Analyzing
- **Week 3**: 100% Remembering, 60% Understanding, 20% Applying, 0% Creating, 0% Evaluating, 0% Analyzing
- **Week 4**: 100% Remembering, 60% Understanding, 20% Applying, 0% Creating, 0% Evaluating, 0% Analyzing
Appendix B. Charts Comparing Type of Response to Type of Question

Response to Higher Order Questions

Responses to Lower Order Questions
Appendix C. Survey Question Responses

1. **What do you feel you have learned about questioning this semester as a student?**

(KC) I feel that I have learned so much more about the different levels of questioning. The examples of these type of questions were also helpful. I have also learned how much scaffolding needs to be involved in higher-level questioning.

(JH) How to research, use CO state standards, work in teams, and think and reflect on what was done.

(BP) As a student this semester I have learned that there are many different levels of thinking that that questions fall into. I have also learned that the way a question is worded is so important. If the person asking the question doesn’t have a desired response in mind, it is difficult to build quality questions.

(BM) I feel that I have learned several things about questioning this semester. I have learned the difference in question (High/Low) and questioning words to use for each category. I have also learned how to incorporate these questions into lessons as well as how to scaffold them. Although I am not an “expert” I think my ability to create and incorporate questions has improved. Overall, I learned about questioning which is something I had never learned about, in this detail, as well as the importance of it.

(JL) I have learned that there are different levels of questioning. I also learned that higher level questions are more beneficial to the students actual thought process.

(CB) As a student, this semester, I have learned that asking higher level questions there are many different levels. I have also learned that the students have to step out of the box and think. They are able to learn more and these questions are very beneficial to the students.

2. **What have you learned as a teacher about using questioning in the classroom?**

(KC) As a teacher, the scaffolding necessary for higher-level questioning is very important. I also learned that it is difficult to teach students to think about and answer higher-level questions. As a teacher, pre-planning is also very important.

(JH) Teaching strategies, preparing lessons, including art with many other subjects, and how to use the VS methods

(BP) As a teacher I have learned the importance of questioning and higher level thinking. I have learned how to plan questions that allow me to get desired responses. I have also learned how to scaffold questions. Often times it takes more than one question to get students to a higher level of thinking.

(BM) Questioning is extremely important to use in the classroom and the students like the questions. Questioning also helps me as a teacher to see what the students know and are capable of doing/understanding. I also think that it helps the students because they not just saying yes or no, but they are able to understand why something is the way it is, for example. Finally, I think that it helps me to see what levels students are at as well as creating richer content.

(JL) Higher level questioning is better for the students to actually think and understand what is actually being asked.

(CB) As a teacher, using questioning in the classroom the students have to process and understand the question they have been asked.
3. What impact do you think the questioning strategies we discussed have had on the students in the afterschool art program?

(KC) I think that the questions have helped the student go beyond their typical, more shallow answers and think about more in depth concepts.

(JH) Helped them think more deeply while applying abstract concepts. They made connections they wouldn’t have otherwise.

(BP) The questioning strategies had a positive impact on the students in the afterschool arts program. Asking the right questions allows students to discover concepts on their own. Questioning also allows students to better understand things because the higher level questions require students to create and develop things that require understanding.

(BM) I think the questioning was very positive for the students. The students were able to understand why they said an answer and were actually able to start answering their own questions of yes/no w/o being asked. Finally, I think that it helped the students the most by enhancing their learning—they were truly able to learn more with better understanding.

(JL) I think that the students are actually coming up with thoughtful answers to what they’re being asked instead of one word or yes & no answers.

(CB) In my opinion, I think that the students have benefitted from being asked higher level questioning. I feel that when the students were asked a higher level question, they thought about the question before answering it.
Appendix D. Action Plan

Select 4 of the following statements or questions to cover the "Future Action" for your Research p.209

Did I really ask what I wanted to ask? Why?

What are further questions I would really like to ask and solve? Explain.

Was I able to sufficiently answer my research question? Explain.

Might it be necessary for me to adjust the question for the next cycle of my research and data collection? Explain.

Did my research design end up being appropriate for what I wanted to address or answer with my research questions?

Were the data that I collected the most appropriate for enabling me to answer my research questions?

How will I proceed for my next action?
Does Culture Matter? A Case Study on Online Retailing Stores across Three Asian Countries

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Abstract

This research aims to explore the impact of culture on online retailing stores across three Asian countries. Hofstede’s culture theory has been used as the theoretical foundation. After reviewing four culture dimensions including individualism-collectivism, power distance, uncertainty avoidance, and masculinity-femininity, we investigated the potential cultural impact on three online retailing stores from China, India, and Thailand, respectively. We compared the website design, primary offerings, major features, communication channels, and payment methods across three cases in order to see if cultural difference could explain the variations. The analysis shows that cultural differences lead to diverse feature design and payment method among these stores. In addition, trust, brand image, and value-added perception play an essential role when consumers make purchasing. Moreover, cultural dimensions such as large power distance and uncertainty avoidance seem to be a barrier against people’s intention to shop online. The results suggest practitioners consider cultural factors when designing online retailing stores. The results also provide a starting point for researchers to further investigate the impact of specific cultural factors on online store design and consumer behavior.

Keywords: Culture, Asian culture, Online retailing, Consumer behavior, trust
Does Culture Matter? A Case Study on Online Retailing Stores across Three Asian Countries

With the fast development of electronic commerce (e-commerce), increasing number of companies expand their business from offline to online. According to the report from eMarketer (2014), global online sales in 2014 are expected to increase by 20 percent over 2013. Moreover, the Asia-Pacific region will become the largest e-commerce market in the world with a sale forecast of $520 billion, and is expected to surpass North America in 2014.

Online shopping in Asia has rapidly grown in the past five years, especially in China. China and India are ranked the first and the second of online shopping sales growth in the world (sales growth of 63.8% and 31.5% respectively) (Richter, 2013). In the Southeast Asia region, Thailand is one of the fastest growing countries in e-commerce. The percentage of the number of Thai consumers shopping online has increased 9.4% from 2011 to 2012 (NECTEC, 2013). Although China, India, and Thailand are developing countries and have similar level of Gross National Income (GNI), online shopping in Thailand is not as successful as in China and India. What are the factors that make them different in online shopping growth?

Researchers found that culture could be a key factor impacting online shopping growth and one important underlying determinant of consumer behavior (De Mooij, 2010; Kotler & Keller, 2012). Cultural passes knowledge and value from one generation to another (Mourali et al., 2005), which may persistently influence consumer preferences and decisions (Luna & Gupta, 2001). Understanding the culture impact on online shopping may help practitioners better design marketing strategies based on customer needs and lifestyles. Therefore, our research questions focus on:

First, would culture impact online retailing stores in terms of their website design, communication channel, payment method, and major offerings?

Second, if culture difference lead to the variations of online retailing stores across different
countries, what Thailand can do to better improve ecommerce market?

This paper is organized as following: first we introduced the Hofstede’s theory on culture dimensions, and compared the culture indices among China, India, and Thailand. Next, we conducted a case study of three online retail stores: Taobao from China, Flipkart from India, and Weloveshopping from Thailand, to investigate their differences in terms of website design, major offerings, communication channel with consumers, and payment method, etc. After that we analyzed each cultural dimension and linked the culture differences among countries to the variations among three online stores. Finally, we discussed the implications of the research results to practitioners, especially to Thailand online retailers, as well as the future research directions.

**Literature Review**

Asian countries share some commonalities in culture; however, subcultures in different regions are varied (Redding, Bond, & Witt, 2012). Since the region and the culture are so varied in Asia Pacific countries, few researchers have studied the influence of subcultural differences on consumer purchasing behavior (Kaup, 2007). Our research intends to fill this gap, and use Hofstede’s dimensional model of national culture to explain the difference of online stores.

Hofstede’s (1980, 2005) theory on national cultural dimensions has been widely used as a framework to analyze cross-cultural phenomenon. The theory describes how a society's culture impacts the values of its members, and further on how these values relate to members’ behavior. The theory constructs a six-dimensional framework, including individualism-collectivism (IDV), power distance (PDI), uncertainty avoidance (UAI), masculinity-femininity (MAS), long term-short term orientation (LTO) or pragmatism-normatism (PRA), and indulgence-restraint (IND). Measured on a 0-100 scale, each dimension describes cultural difference from varied perspectives. In this paper, we focus on the four most relevant dimensions to consumer behavior:
individualism-collectivism (IDV), power distance (PDI), uncertainty avoidance (UAI), and masculinity-femininity (MAS).

**Impact of Individualism-Collectivism on Consumer Behaviors**

![Score range of individualism and collectivism dimension.](image)

The individual-collectivism dimension has been used to describe the relationships in between individuals. Individualism refers to the social pattern in which individuals see themselves as autonomous and independent. Individuals are motivated by their own preferences, needs, and rights, and are less likely to be affected by other people. Collectivism, in contrast, refers to individuals who see themselves as an integral part of a whole group. Therefore, people are motivated by norms and duties imposed by the overall group (Kacen & Lee, 2002). No culture is purely individualistic or collectivistic. Instead, there is a level of individualism and collectivism within each country and individual (Green, Deschamps, & Páez, 2005). Some culture may be more individualistic while others may be more collectivistic.

The individualism-collectivism value influences consumers’ purchasing behavior, which creates variation in marketing strategies to better target buyers in different cultural contexts. In individualist culture, people are more likely to shop alone or in a small group (Shannon & Mandhachitara, 2005). Normally, they have some extent of market knowledge, which helps them save shopping time and pay lower prices. Most likely they make decisions based on internal intention such as past experience and personal preference (Doran, 2002).

In collectivist culture, people are more likely to shop as a group (Shannon & Mandhachitara, 2005). Normally, they are more concerned with status, brand, and family or in-group benefits, while the people in individualist culture are more interested in design and function (Nayeem, 2012). Collectivist individuals’ decision making relies more on external reasons such as
interpersonal communication, friends or family’s opinion, and their feelings and trust in the company (Doran, 2002; Dhar, 2007; De Mooji & Hofstede, 2011).

Moreover, advertising and sales are different in these two cultures. Individualistic culture features low-context communication in which communications are direct, explicit, and verbal-based. People tend to ask direct questions and prefer to get responses soon. On the contrary, collectivistic culture, features high-context communication in which communications are in an indirect style. For instance, building a relationship and trust between parties is necessary for the following communication (Gudykunst & Kim, 1997; De Mooji & Hofstede, 2011). The more interaction between buyers and sellers, the higher the trust generated between two sides and more satisfied the customer would be (Deutsch, 1958).

**Impact of Power Distance on Consumer Behaviors**

![Score range of power distance dimension](image)

*Figure 2. Score range of power distance dimension.*

Power distance is the extent to which the less powerful members of a society accept that power is distributed unequally (Hofstede, 1980). A Culture with small power distance means that inequalities among people should be minimized and there should be interdependence between less powerful and more powerful people. Family members are generally treated equally and family decisions are reached democratically. Whereas, culture with large power distance means that inequalities among people are not only expected but also desired in the society.

In large power distance cultures, people show respect towards superior and seniors, and their purchasing decisions are affected by the opinion of more powerful people (Wursten & Fadrhonec, 2012). Less powerful individuals prefer purchasing products or services that represent their own status, and are similar to the taste of their referent group in order to maintain social status. The choices of brand are influenced by external factors such as friends, families, or sale agents (De
Mooji & Hofstede, 2011).

In small power distance cultures, people are more independent and tend to make free choices. They don’t have to follow the suggestions from superiors or seniors (Wursten & Fadrhonc, 2012). Research shows that small power distance cultures prefer buying products and services that differentiate themselves from referent groups, and brands have to be unique and distinct with consistent characteristics (Ting-Toomey & Oetzel, 2003).

**Impact of Uncertainty Avoidance on Consumer Behaviors**

![Score range of uncertainty avoidance dimension.](image)

Uncertainty Avoidance is the extent to which people feel threatened by uncertainty, and try to avoid such situations. Hofstede (1980) states that this fundamental issue is how a society feels with an unstructured situation in the future.

In weak uncertainty avoidance cultures, people tend to be more open, innovative, entrepreneurial, and easily adaptable to change. People are more tolerant of different opinions and try to have as few rules as possible (Hofstede, 2005). They perceive risks and uncertainty as part of normal life and an essential process to succeed.

In the cultures of strong uncertainty avoidance, there is a need for rules and formality to structure life. People sense that uncertainty in life is negative and will be a continuous threat. People with high level of uncertainty avoidance are concerned more about security and try to avoid failure as much as possible (Wursten & Fadrhonc, 2012). Meanwhile, they are also more emotional, anxious, stressed, and intractable (Hofstede, 2001). Due to high uncertainty, people in this society do not accept new things, which they have not ever had any knowledge of (Wursten & Fadrhonc, 2012). As a result, the high uncertainty avoidance cultures tend to have fewer
acceptances for new products, services, and technologies than the low uncertainty avoidance cultures (Roozmand, Ghasem-Aghae, Nematbakhsh, Baraani, & Hofstede, 2011).

Consumers with high-level Uncertainty avoidance will pay more attention to brand name in order to avoid risks (De Mooji, 2003; Roozmand et al., 2011). Sales agents are important to decrease this customer uncertainty in products and services. They are highly expected to know everything about products and services, and have to be able to answer all questions that the customers need to know (Wurten & Fadrhonc, 2012). Design and fashion are the first features when they choose goods, while the customers from the weak uncertainty culture will place more emphasis on functionality.

**Impact of Masculinity-Femininity on Consumer Behaviors**

![Score range of masculinity and femininity dimension.](image)

The dominant values in a masculine culture are achievement and success, while those in a feminine culture are caring for others and quality of life (Hofstede, 1980). In masculine cultures, performance and achievement are important. People tend to be more competitive; therefore, money, status, and privileges are valued more to indicate success. While in feminine cultures, free time and flexibility are more favored, and people believe that collaboration and interaction are more important (Wursten & Fadrhonc, 2012).

In masculine cultures, there is a big difference between the roles played by males and females, whereas in feminine cultures those two roles overlap. In masculine cultures, husband and wife have different responsibilities. Wives take responsibility for the decision-making on household issues such as family purchasing, while husbands are responsible for decisions such as living and investment. On the contrary, in feminine cultures, men may do household shopping just like women (De Mooji & Hofstede, 2011). A Eurostat report (2002) shows that in low masculinity
cultures, 52% of men spend time on shopping.

**Case Studies**

The report of Mastercard Worldwide (2008) shows that culture and economy pattern are the two key drivers of online shopping growth. To explore the impact of culture on online shopping behaviors, we chose cases from three developing countries (i.e. China, India, and Thailand), which have a similar level of GNI (United Nations, 2013), but different types of sub-cultures. Table 1 shows the comparison of cultural indices on these three countries.

<table>
<thead>
<tr>
<th>Country</th>
<th>IDV</th>
<th>PDI</th>
<th>UAI</th>
<th>MAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>49</td>
<td>71</td>
<td>31</td>
<td>57</td>
</tr>
<tr>
<td>China</td>
<td>16</td>
<td>74</td>
<td>21</td>
<td>68</td>
</tr>
<tr>
<td>Thailand</td>
<td>16</td>
<td>57</td>
<td>54</td>
<td>32</td>
</tr>
</tbody>
</table>

*Table 1. Culture indices of Indian, Chinese, and Thai*

**Three Cases of Online Stores**

**Taobao: online shopping website in China.** In 2014, the e-commerce market in Asia is expected to have higher revenues than North America (Richter, 2013), especially in China. The population of the Internet users in China has increased 10 percent from 2012 to 2013 and has reached 600 million at the end of 2013 (China Internet Network Information Center, 2013). The number of Chinese online shoppers reached 242 million in the middle of 2013 (China Internet Network Information Center, 2013). This makes China the biggest market for online shopping.
Taobao (www.taobao.com) was founded by Alibaba Group Holding Limited. in 2003, and has become the biggest online market auction site in China. It holds about 90 percent of customer to customer (C2C) market share in China (Alibaba Group Holding Limited SWOT Analysis, 2013) and has over 500 million registered users from around the world as of June 2012 (Online Retail in Asia-Pacific, 2013). In April 2008, Taobao launched Tmall.com, a business to customer (B2C) platform, to fulfill its customers’ need by providing brand name products (Alibaba group, 2014). Taobao and Tmall revenues collectively reached RMB 1 trillion (US $159.5 billion) at the end of 2012 (Milward, 2012).

When first entering the market, in order to attract sellers and buyers to the market, Taobao launched a “free of charged” strategy, meaning free of any transaction and listing fees in the first three years. With this strategy, Taobao quickly earn over 60 percent of market share and was able to compete with eBay China (Yang & Liu, 2009). The company has created an online chat service called “Taobao Wangwang” to allow direct communication between buyers and sellers on products, sales, shipping, and services, which helps build trust between sellers and buyers as well as their confidence of using the website for transactions (Yang & Liu, 2009).

To better support smooth transactions, Taobao also provides a payment function called “Zhifubao” (Alipay), similar to Paypal in the U.S. Zhifubao temporarily saves the money during transitions, and will not pay the sellers until the buyers receive the product and confirm the
satisfaction. The payment method benefits both sellers and buyers (Yang & Liu, 2009).

In order to help shoppers make decision and sellers maintain high-quality service, Taobao develops a comprehensive ranking system for both buyers and sellers. Buyers have to rate sellers in terms of product itself, shipping speed, communication channel, and customer services, etc. Sellers also need to evaluate if buyers are good customers. The rank for each individual seller and buyer is determined by rating data, plus other information such as the tenure using the website and the number of transactions, etc. (Li et al., 2012).

Taobao and Tmall sales reached RMB 35 million (US $5.71 billion) in just one day on November 11, 2013, a new online shopping festival, similar to cyber Monday in the U.S. (Incitez China, 2013; Milward, 2013). The festival started in 2009, and the sales increased by 80 percent from 2012 to 2013 (Osawa, 2013).

**Flipkart: online shopping website in India.** India had a population of Internet users of over 120 million in 2012 (ComScore, 2012). This number is expected to reach 370 million in 2015 (Mckinsey & company, 2012).

![Flipkart.com webpage](image)

*Figure 6.  Flipkart.com webpage*

Flipkart is a leader of the online retailers in India. It was founded in 2007 by Sachin Bansal and Binny Bansal. They first started selling books online and gradually extended the business to mobile phones, music, games, and so on (Flipkart, 2014). At the end of 2013, its customer base
had reached 10 million, which grew 431% from 2012 (ComScore, 2012) with annual sales of $100 million (Brohan, 2013).

For the payment method, Flipkart provides multiple options, for instance cash on delivery (COD), which allows customers to pay cash when the order is delivered. In addition, other payment methods are also available for customers including debit cards, credit cards, online banking, and Easy monthly installment option (EMI). Flipkart offers an EMI, which allows customer to choose three, six, nine, or 12 months payment. Customers will be charged an annual interest rate base on the bank they use and the period of time they choose (Flipkart, 2014). Additionally, in the earlier part of 2013, Flipkart launched PayZippy, which provide faster, smoother, and safer online payment experience to their customers. PayZippy allows Flipkart to analyze their consumers’ personal experience and behavior (The Hindu Business Line, 2013). Moreover, the company offers a 30-day free return policy, which allows customer to change or return the product if they find it damaged or not the same as described (Flipkart, 2014).

Mr. Ravi Vora, Marketing VP of Flipkart, said that in the first 3.5 years, Flipkart extended their customer base by word of mouth and social marketing such as Twitter and Facebook, which really helped them grow their customer base (Chougle, 2012). In order to improve user experience during use their website, Flipkart provides a user friendly website. For instance, it offers a lite version website for the lower speed Internet users (Sagar, 2012).

**Weloveshopping: online shopping website in Thailand.** Thailand e-commerce is growing rapidly due to an increase in number of Internet and mobile users, development of online payment systems, and changing of consumer behavior (Search Blog Asia, 2011). NECTEC reports that the percentage of Thai consumers shopping online has increased 9.4% from 47.8% in 2010 to 57.2% in 2011. Additionally, the Internet users are expected to grow from 22 million in 2011 to 36 million in 2016 (Euromonitor international, 2013). The e-commerce market is booming, and more players are coming to this business, which creates more intense competition.
True Digital Content and Media Company Limited, the sub company of True Corporation Plc. Group, had relaunched www.weloveshopping.com in 2007 after its merger with www.marketathome.com. Weloveshopping became the top online shopping website in Thailand, offering more than 320,000 online stores with around 8.5 million products and services (True Corporation, 2012). The company is now driving three e-commerce websites: www.weloveshopping.com, a C2C site, www.itruemart.com, a B2C site for the Thai market, and www.itruelife.com, a B2C website for the Chinese market. They plan to expand the customer base to Europe, the U.S., India, and the Philippines in 2014 (Boonnoon, 2013).

Currently, women's clothes and cosmetics are the best-selling products in Weloveshopping, followed by books and electronic products. The website plans to extend its products and services based on customer demands and lifestyles. A Mastercard survey of Thai Internet users (2013) shows an increase in mobile Internet users. Almost 93% of the online users in Thailand are able to access the Internet from their mobile phones, and 51% of them made online purchases from their mobile phones in the last three months. Following this trend, True Corp. plans to provide a social-network platform and mobile application to support the C2C marketplace in 2014. This will allow customers to buy and sell goods via smart phones. They also offer special services for its online merchants, like a platform and application templates, which let them create an
application by themselves, and e-commerce integration to merchants’ back-end systems to develop more market segments. Moreover, to create mutually beneficial service and product delivery channels for a complete product or service transaction, the company is preparing to launch a business-to-business-to-consumer platform (B2B2C), which is an emerging e-commerce model that combines B2B (business to business) and B2C (Pornwasin, 2010; Boonnoon, 2013). In addition, the company developed different categories to meet various consumer preferences, such as “Brand” for brand-name hunters and “Trend & Design” for fashion lovers.

As for the payment method, the company provides the “We Trust” system to temporarily hold the payment for seven days until customers receive the product and confirm the satisfaction with the transaction (Pornwasin, 2010). Besides a wide range of online payment methods, such as mobile payment, credit cards and debit cards, it also offers offline payment methods. For instance, the website has linked with the Thailand Post Office and Family Mart to allow online shoppers to pay transaction and payment fees at counters and cashiers (Pornwasin, 2010; Boonnoon, 2013; Search Blog Asia, 2011).

True Corp. also developed other strategies such as joint ventures with business partners. For example, the company has joined Villa Market to offer a new shopping lifestyle, “Weloveshopping On-The-Move”, which allows customers to buy online goods (including an imported product) from 10 Villa Supermarket branches through www.weloveshopping.com with several special options (Pornwasin, 2010; Boonnoon, 2013).

Table 2 shows a summary of the key features including main product, payment method, communication tool, and other features from the three cases.

<table>
<thead>
<tr>
<th></th>
<th>Main product</th>
<th>Payment</th>
<th>Communication</th>
<th>Other key features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taobao</td>
<td>Clothing</td>
<td>Zhifubao</td>
<td>Taobao</td>
<td>One day sales</td>
</tr>
</tbody>
</table>
Table 2. Summary of the key features of the three cases.

<table>
<thead>
<tr>
<th>(China)</th>
<th>Cosmetics</th>
<th>(Alipay)</th>
<th>Wangwang</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flipkart (India)</td>
<td>Books</td>
<td>COD</td>
<td>Twitter</td>
</tr>
<tr>
<td>(India)</td>
<td>Games and media</td>
<td>EMI</td>
<td>Facebook</td>
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<tr>
<td></td>
<td></td>
<td>PayZippy</td>
<td></td>
</tr>
<tr>
<td>True (Thailand)</td>
<td>Clothing</td>
<td>We trust</td>
<td>True app</td>
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<tr>
<td>(Thailand)</td>
<td>Cosmetics</td>
<td>Offline payment</td>
<td>Twitter</td>
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<td></td>
<td></td>
<td>True’s mobile wallet system</td>
<td>Facebook</td>
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<td></td>
<td></td>
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<td>Instagram</td>
</tr>
</tbody>
</table>

Analysis

The impact of collectivism on online consumer behaviour. Hofstede’s IDV dimension shows that countries in Asia seem to be collectivism. They score lower than 50. Consumer purchasing behavior will be mainly motivated by status and group benefit. They are high-context cultures, in which the societies have close connection, so information is understood through implication and explicit communication is unnecessary. Therefore, building relationship and trust is essential for consumers to make purchasing decisions. The collectivist consumers prefer national or global brands in order to avoid risk, and maintain group harmony (Zhu, Warner, & Rowley, 2007; Shannon & Mandhachitara, 2005). The Taobao and weloveshopping strategies develop new market segments for “Brand” and “Trend & Design”, which fits the brand and design preferences of collectivist societies.

Moreover, an image of online retailers is also important for Thai shoppers. Research Dynamics (2011) found that Thai consumers tend to perceive online retailers as having a modern and international image as well as offering the convenience for shopping. Therefore, providing a good image and recognition of customers’ needs may be able to attract customer interest as well.
Focusing among these three collectivist countries, India tends to have the highest level in individualism, which is almost a score of 50 compared to China and Thailand, which have a score of just 16. This result shows that India seems to have more characteristics of individualist societies than China and Thailand; however, after studying the cases, this point is still not clear in term of individualism in Flipkart’s marketing strategy.

**The impact of power distance on online consumer behaviour.** The scores of power distance are high in all three countries. China received a 74 score, followed by India (71), and Thailand (57). The large power distance in these countries shows that there are some inequalities, which can occur in areas such as prestige, wealth, power, human rights, and technology among others.

For India, the terms caste, estate and class are the three types of rank inequalities used to differentiate society into different functional areas (Bohannan, 1969). The Indian caste system has a significant role in maintaining Indian culture. It is a hierarchical structure that divides people into four varnas, a social class in India: Bradmins (mutually exclusive), Ksahtriyas (exhaustive), Vaishyas (hereditary), and Shudras (occupation-specific). The lower status group occupation like Shudras will have limited access to education and jobs (Son, 2007).

China has long been influenced by Confucianism, which has a profound influence on family, social life, as well as business. Family members respect seniors in the family and tend to follow their instructions (Zhang & Bond, 1998). Therefore, they tend to trust the brands and products that family have long used, and purchase the same brand or product as other members (Monga & John, 2007).

A similar system does exist in Thai culture. Thai people still prefer a hierarchical and group-orientated structure (Eldridge & Cranston, 2009). Family members such as uncles, aunts, and cousins create a family-based identity in Thailand; the other family members respect seniors or
leaders to make purchase decisions (Childers & Rao, 1992; Plabdaeng, 2010). However, because most Thai culture is influenced by Buddhism, it has a less strong power distance compared to India and China.

The role of opinion leaders may become more remarkable in cultures that are high in power distance (Kau & Jung, 2004). Yau (1988) suggests that advertisements targeted at Chinese would be more effective when using societal leaders to recommend products or services. The same approach would also work in India, where opinion leaders play an important role in guiding consumers making purchasing decisions (Kau & Jung, 2004).

Additionally, the different degree of urbanization gives countries in Asia a large power distance, which further impacts consumer preference. For example, in urban China, people prefer to shop weekly in huge grocery stores or modern shopping centers, while people in suburban China tend to shop daily at local farmers markets. Online shopping provides convenience to both people who live in urban areas with limited time and people who live in rural areas with restricted choice of products. Flipkart realizes that online shopping has become increasingly popular in small cities, but Internet connectivity and logistics infrastructure still remains a barrier for these small towns (Ians, 2014). To solve this problem, Flipkart offered a lite version website for the lower speed Internet users.

De Mooji (2010) mentioned that people in collectivistic and/or high power distance cultures make purchasing decisions based on information via implicit interpersonal communication and perception of trust in the seller company. As in the case of Taobao, it creates a ranking system for both buyers and sellers to facilitate better judgment. Additionally, social media is used in all three companies in order to provide two-way communication between buyers and sellers.
The impact of masculinity-femininity on online consumer behaviour. The extent of power distance also partially impacts the degree of masculinity-femininity. We found that the countries with a high level of power distance tend to get high scores in masculinity-femininity as well. In masculinity and large power distance culture, males and females play different roles in housework such as shopping (Wursten & Fadrhonc, 2012). For instance, the Indian and Chinese seem to have more competitive and pressured societies than does Thailand, and women in those two countries have more responsibility in household purchasing than do women in Thailand. Thailand has a lower score in MAS compared to China and India. In Thailand, people will enjoy shopping more, and husbands also go shopping and often times husbands and wives make joint-decisions. However, husbands are normally the leader in making purchasing decisions in traditional cultures in Thailand (Plabdaeng, 2010).

The impact of uncertainty avoidance on online consumer behaviour. Thailand has a high level of uncertainty avoidance (with a score of 54) as opposed to China and India (with scores of 21 and 31 respectively). This result indicates that Thai people are more concerned about risk and security, and are more resistance to accepting new things. Therefore, providing trust and secure shopping experience is essential to Thai shoppers. As we found from the Weloveshopping case, popular online products in Thailand are low risk goods such as books, clothes, accessories, and cosmetics, which normally involves relatively small bills (Research Dynamics, 2011).

Research Dynamics (2011), “The study of Thai online consumers”, reports that the main reason to prevent Thai people from shopping online is the security concern, especially the security of payment. The research found that Thai consumers prefer to pay by cash instead of other online payment methods. Weloveshopping realized this problem, and offered the WeTrust system providing both online and offline payment services in order to help consumers build trust.
and confidence in online transactions.

In order to improve trust, Taobao in China provides Zhifubao, a payment method to allow the transaction being paid after consumers receive the products. Additionally, Taobao created Taobao Wangwang, an online chat tool to facilitate buyer and seller communication before and after transactions. Similarly, Flipkart provide “Cash on delivery” and a 30-day replacement guarantee. All these methods efficiently reduce the uncertainty and enhance confidence of consumers in online purchasing. Rating of services and review of products, as well as online assistance have been used in Taobao and Flipkart to reduce the purchasing uncertainty. Suggestions from others buyers are important for group-based societies. Additionally, the online assistance helps build trust between sellers and buyers, and further makes shoppers feel comfortable while shopping.

The fast growth of the middle class and young generation in these three countries greatly reduces the extent of power distance and uncertainty avoidance. People tend to become more individualist than before. The emerging middle class are well-educated, with high purchasing power and a different consumption style in which people tend to spend more money, and are more likely to use credit cards, and to adopt new technology quickly.

In addition, economic development, education, and increasing number of working women changes the decision making process gradually (Sidin, Zawawi, Yee, Busu, & Hamzah, 2004). Thai consumers now stay online longer than before. Mastercard (2013) reports that 90.6% of recent Thai shoppers made online purchases. These changes show that Thai consumers have become more open and more familiar with online-shopping. Table 3 summarizes the impact of four cultural dimensions on the three online stores.

<table>
<thead>
<tr>
<th></th>
<th>IDV</th>
<th>PDI</th>
<th>UAI</th>
<th>MAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taobao</td>
<td>Collectivism</td>
<td>High PDI</td>
<td>Low UAI</td>
<td>Masculinity</td>
</tr>
</tbody>
</table>

Table 3
<table>
<thead>
<tr>
<th>Country</th>
<th>Cultural Values</th>
<th>Business Strategy</th>
<th>Key Considerations</th>
</tr>
</thead>
</table>
| China     | Collectivism    | Develop Taobao Wangwang to build relationship and trust before purchasing. | • A hierarchical and group-orientated structure.  
• Status and face are important.  
• Create rating system for buyers and users. |
|           | Dominant values are success, money, and status.  
• Competitive and stress atmosphere.  
• Large role difference between male and female. |
|            |                | Launch Tmall.com to fulfill consumers’ need of premium brand. | • Risk is challenging.  
• Openness and adaptable to new innovation.  
• Inventing payment method called Zhifubao for easy and safe payment. |
| India     | Masculinity    | Collectivism      | High PDI           | Low UAI           |
| Flipkart  | Collectivism   | Create trust and relationship via social media channels. | Offer lite version website for the lower speed Internet users.  
• Status and face are important. |
|           |                |                    | Providing varieties of payment methods: COD, EMI, and PayZappy. |
|           |                |                    |                    |
Table 3. Summary of the impact of four culture dimensions on online retail stores.

<table>
<thead>
<tr>
<th>True (Thailand)</th>
<th>Collectivism</th>
<th>High PDI</th>
<th>High UAI</th>
<th>Femininity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Collectivism</td>
<td>High PDI</td>
<td>High UAI</td>
<td>Femininity</td>
</tr>
<tr>
<td></td>
<td>- Develop new market segments for 'Brand' and 'Trend &amp; Design preference.</td>
<td>- Risk is negative thing.</td>
<td>- Risk is negative thing.</td>
<td>- Caring for other and quality of life.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Concerning about security and strict on the rule.</td>
<td>- Concerning about security and strict on the rule.</td>
<td>- Relaxing and friendly atmosphere.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Creating trust is important.</td>
<td>- Creating trust is important.</td>
<td>- Small role difference between male and female.</td>
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<td>- Use &quot;WeTrust&quot; system to enhance consumer confident and provide a variety channels of payment services.</td>
<td>- Use &quot;WeTrust&quot; system to enhance consumer confident and provide a variety channels of payment services.</td>
<td>- Small role difference between male and female.</td>
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**Implication**

According to our study, cultural dimensions influence online retail stores and consumer purchasing behavior. China, India, and Thailand are collectivist and all show high extent of
power distance, while Thailand shows higher extent of uncertainty avoidance and lower degree of masculinity scores than the other two countries. Thai consumers tend to enjoy offline shopping more, but are less open to online shopping and more concerned about online security comparing to Indian and Chinese.

Building trust and relationships, offering close communication, and providing flexible payment methods are essential for Thailand to enhance online shopping. For instance, if True Corp. adopts certain strategies from Taobao and Flipkart such as online chat tool and rating system, it may greatly improve customer trust and shopping experience. Moreover, new technology such as biometrics that identifies body features such as fingerprints and voice pattern can be used for authentication and to reduce uncertainty.

**Conclusions**

In this research, we investigated how culture dimensions impact online retail stores and consumer purchasing behavior in three Asian countries. We first introduced four culture dimensions relevant to consumer purchasing behavior based on Hofstede’s theory: Individualism-Collectivism (IDV), Power distance (PDI), Uncertainty avoidance (UAI), and Masculinity-Femininity (MAS). We then conducted a case study of three online retail stores from China, India, and Thailand, respectively. We studied the marketing strategies in each country where there are differences in culture. Last, we analyzed the marketing strategies in each country based on four cultural dimensions. Firms doing business with multicultural markets can adjust their marketing strategies based on the consumers’ cultural background. Understanding cultural differences among consumers will help the company create a better marketing strategy that suits that culture the most.

For the future research, economy, policy, and technology advancement may also be the factors affecting consumers’ online purchasing behavior. Conducting case studies in other
countries and studying their culture would be valuable in order to enhance an understanding about cultural differences.
References


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