

## The Effect of Professor's Attractiveness On Distance Learning Students

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### Abstract

Technology enabled learning is becoming more popular and pervasive in education. While the effectiveness of distance learning versus traditional classroom education is strongly debated, human factors such as students' perception of their professors can influence their desire to learn. This research examines the perceptual effect of attractive professors on business students enrolled in distance learning courses. This study expands on prior studies by testing whether the attractiveness of the professor matters to student learning within the context of online learning environment. A total of 122 online business students were surveyed. Our findings suggest that professor's attractiveness has a statistically significant effect on student learning, motivation, and satisfaction. In addition, online students perceived attractive professors with more expertise as an instructor. Female students had higher motivation than male students. Furthermore, separate analysis indicated that attractiveness effects were stronger for participants over the age 46 when compared to other groups.

**Keywords:** Distance learning, online teaching and learning, online instructors attractiveness, course satisfaction, student motivation

## **INTRODUCTION**

Being human beings, it comes as no surprise that attractive individuals have an effect on people, even in the meritocracy that is the classroom. When it comes to professors, how does this effect play out? Are students affected positively or are they distracted? Past research indicates that students gave attractive professors higher course ratings and expressed higher course satisfaction (Felton, Mitchell, & Stinson, 2004; Liu, Hu, & Furutan, 2013). Additionally, students believe that attractive professors can influence their educational experience and feel they can learn more from an attractive professor (Gurung & Vespia, 2007; Romano & Bordieri, 1989).

But in researching attractiveness, do professors' attractiveness matter in an online learning environment? Online learning is a method in which lectures are conducted over technology on the Internet. Various technologies such as multimedia, video streaming, virtual classrooms and email are just few of the different methods to deliver lectures and course content to students (Thorne, 2003). According to the latest Sloan survey, over 6.7 million students were taking at least one online course during the fall 2011 semester which was an increase from the previous year (Allen & Seaman, 2013). However, student perceptions seemed to be mixed with the online content (Smart & Cappel, 2006). Do students learn more and learn better when watching lectures and interacting with an attractive looking professor in an online class? Most studies in the area of the effect of attractive professors on learning are done in a traditional classroom setting where students were provided with ample opportunities to interact with the professor (or instructor) face-to-face. However, in an online class this interaction can vary depending upon the choices of the professor. Professors who teach online can choose from an array of technologies that are available for online classes.

They can also choose how much they want to be seen, to what lengths, and how much they want to interact with their students, both synchronously (e.g. live video conference) and asynchronously (e.g. email or online forum). With the popularity of online learning, it is important to understand whether professors' attractiveness matter to students in distance learning. Do the results of attractive professors' effect on learning found in the traditional classroom; that students feel they can learn more from an attractive professor, translate over to online learning? The answers can help professors determine the right medium to use to enhance online learning. The authors believe that even though online classes vary in their makeup and delivery as much as traditional classes, human factors like professor attractiveness can influence student reactions in online classes.

In this study, the authors examine whether professors' attractiveness matters to students online. The authors explore whether professors' attractiveness can predict a difference in students' satisfaction, learning outcomes, and students' rating of the course. There is ample evidence to show that this is true in the traditional classroom. However, as far as the authors can determine, there currently isn't any research on professors' attractiveness in the context of online learning. The authors' initial hypothesis is that this effect is also true in online learning. The authors think that when students perceive their professors as being attractive, students will report higher learning outcomes and satisfaction.

## **LITERATURE REVIEW**

There is a large body of literature showing that professors' attractiveness affect student evaluations. Many studies have found that students tend to give attractive professors higher course evaluations than their non-attractive counterparts (Feeley, 2002; Felton et al., 2004; Hamermesh & Parker, 2005; Hossain, 2009; Lang, 2005). Students taught by attractive professors, across class years and majors, claimed that they learned more and liked their classes better (Gurung & Vespia, 2007). When students were asked to recall their educational experience with attractive professors, the results indicate that students were more motivated and enjoyed their classes more (Liu et al., 2013).

Attractive professors seem to have a significant advantage from their student evaluations. They are often judged more favorably according to their level of attractiveness (Bonds-Raacke & Raacke, 2007). Although it is tempting to deny the idea that having an attractive professor would result in higher student learning outcomes, research suggests that people in general like to socialize and interact with individuals that are attractive (Adams & Crane, 1980). From a social psychological perspective, people enjoy being around attractive people; and that they also desire to form and maintain close social bonds with those that are attractive (Lemay, Clark, & Greenberg, 2010). Additional research suggests that attractive individuals were perceived as warm, kind, trustworthy, and sociable (Snyder, Tanke, & Berscheid, 1977; Langlois, et al., 2000). As such, the authors believe that physical attractiveness would play an important role in teacher-student social interactions and judgment formation from students. Students who perceive their professors are attractive will elicit more positive emotional reactions to interact, as a result, they would express higher motivation to learn and report higher course satisfaction (Liu et al., 2013).

Attractive individuals are also perceived as more competent than less attractive individuals. Past meta-analysis research indicates a moderating effect between physical attractiveness on perception of intellectual competence (Eagly, Ashmore, Makhigani & Longo, 1991), and that this effect is significantly observed both in children and adults when measured against their standardized test scores and grade point averages (Feingold, 1992). Further meta-analysis research suggests a relationship between attractiveness to actual competence, however, this effect is only significantly observed in children but not in adults (Jackson, Hunter, & Hodge, 1995). A review of sociology literature indicates that physical attractiveness diffuses a perception of socioeconomic status; in which external cues such as race, age, gender, or occupation, may results in a specific stereotype and association to hierarchies of status within groups (Driskell & Salas, 1993; Webster & Driskell, 1983; Lockheed, 1985). Those individuals with the best perceived characteristics are more likely to be rewarded with more power, prestige, and influence (Oldmeadow, Platow, & Foddy, 2005). Accordingly, as suggested by literature attractive professors may affect students both at the interaction level and status (or impression) formation. The authors believe that this bias can affect students in which attractive professors will perceive to be more credible and trustworthy. Consequently, the authors posit that professors who are considered attractive by their students will do better than their counterparts. Based on the review of past literature, the authors hypothesize that professors' looks matter in online learning.

*H1:* Students will perceive online instructors to have more expertise when the professor is attractive.

*H2:* Students will perceive online instructors to be more effective when the professor is attractive.

*H3:* Students would be more motivated to learn in the online course when the professor is attractive.

*H4:* Students will perceive to learn more in the online course when the professor is attractive.

*H5*: Students will be more satisfied with the online course when the professor is attractive.

## **METHODOLOGY**

### **The Sample**

Undergraduate (N = 50) and graduate (N = 72) students at a private university and at a public university who were enrolled in online courses were asked to participate in a voluntary survey. There were 242 participants but only 122 surveys were completely filled out and available for analysis in the study. There were 51 males and 71 females in the study. There were four age categories: 18-25 (N = 20), 26-35 (N = 39), 36-45 (N = 32), and over 46 (N = 31). Students were asked about their perception of their online professors, learning outcomes from the course, motivation to learn and overall satisfaction with the course.

### **Study Design**

In order to compare student learning and motivation outcomes between high attractive and low attractive professors, we described two different situations where students have to rate their online professors. We used the rating method that is common in a popular professor rating website, where students rate professors they have previously taken. On the website, students are asked whether their professor is hot, which will then display a chili pepper icon next to the professor's profile. In this study, we described a similar situation, where students had to recall a professor (attractive or not attractive) they had while taking an online course.

Imagine that you are invited to post your review of your professors on [ratemyprofessor.com](http://ratemyprofessor.com) on the dimension of hotness. Think of an online class you had in the past 3 years with a professor who you would rate as high in hotness (red chili

pepper). Think about the class he/she was teaching and your experience in the class and answer the following questions.

Participants then answered questions about the professor and their learning outcomes, motivation and satisfaction. The second section of the survey was set up the same way; however, the situation was based on a professor students would rate low in hotness.

### **Instrumentation**

The measures used in this study were modified from established scales to ensure appropriate validity and reliability scores. To test the hypotheses, five measurements were identified in the survey: hotness, instructor expertise, motivation, learning outcomes and satisfaction with the course. Each measure is described below.

**Hotness.** This measure is defined as how attractive a professor is perceived. The five dimensions of hotness was taken from Liu et al.'s (2013) study. Through content analysis, they found that students' perception of hotness were based on five dimensions: good looks, good figure, well-dressed, attractive and sexy. All measures used a seven point Likert scale ranging from 1 (strongly disagree) to 7 (strong agree), (Cronbach's  $\alpha = 0.881$ ).

**Instructor expertise.** This measure was a modified scale from Ohanian (1990). Expertise from an instructors imply as source credibility to imply that there are certain positive characteristics that affect the acceptance of the message by the student (Ohanian, 1990). The author found that agreement with instructor's message was directly varied with the perceived level of expertise. Items in this measure asked whether "the instructor seemed like an expert," "seemed like experienced," "seemed knowledgeable," "seemed qualified," and "seemed skilled" (Cronbach's  $\alpha = 0.988$ ).

Instructor Effectiveness. This measure identifies behaviors that lead to instructor effectiveness in online courses. This measure was modified from Jones' (2012) study and adapted for this study. The greatest impact on student's perceived of teaching effectiveness was whether the instructor in the online course stimulated to learn. Students wanted a course that was organized well and presented information in a structure manner. Items in this measure asked questions like, "Overall, the instructor was effective," "The instructor presented the information clearly," and "The instructor stimulated me to learn about the topic" (Cronbach's  $\alpha = 0.952$ )

Motivation. This measure identifies a student's motivation to learn material which is described as a process that includes stimulating properties. It can lead students to arousal behaviors, which can give students direction to their behaviors and lead to choices of a preferred behavior (Brophy, 1983; Ames, 1990; Dweck, 1986). The items were based on the study by Christophel (1990). The items are concerned with how a student feels about the class and include 12 bi-polar adjectives (Cronbach's  $\alpha = 0.950$ ).

Learning outcome. Individuals have their own thoughts about the meaning of learning, which have been formed through early experiences and evidence of change in knowledge (Bamber & Castka, 2006). This measure is based on a modified scale from Bamber and Castka (2006) and items included "I think the online lectures were important for me," "I think the online lectures were excellent," "I think the online content was interesting," "I found the online content to be very useful," and "I feel I retained what I have learned from watching the online lectures" (Cronbach's  $\alpha = 0.923$ ).

Satisfaction. This measure identified how pleased students were with taking the online course. The measure was adapted from Oliver's (1980). Items included students'

satisfaction with their experience in the course and their decision to take the course (Cronbach's  $\alpha = 0.912$ ).

## **ANALYSIS AND RESULTS**

Since the same participant had to answer questions regarding both high and low attractive professors, a repeated measure analysis of variance was conducted on the data. When asked to think of an instructor high in attractiveness, students gave higher values on the attractiveness factor than they did when there were asked to think an instructor low in attractiveness ( $M_{\text{high}} = 4.427$ ;  $M_{\text{low}} = 3.869$ ) = 25.425,  $p=0.000$ ).

We conducted the repeated measure analysis through two models to further examine the data. In both models, attractiveness of the instructor influences the dependent variables used in the study. However, there were some interesting findings when interaction factors, gender and age of the participants, were added to the model. In the first model, we tested how gender interacts with attractiveness on the dependent variables. We found that gender interacted with motivation,  $F(1, 120) = 4.913$ ,  $p < .030$ . When looking at the mean levels, both genders, especially female students, had lower motivation levels in the online course when the instructor was not attractive. In the second model, we added both age of the participants and gender to the model. We found that the interaction of gender with attractiveness diminishes but the interaction of age and attractiveness influences satisfaction, instructor's effectiveness and instructor's expertise. The second model is what we used in the repeated measure analysis. The analysis showed that students were influence in learning outcomes on online courses by the attractiveness of the professor,  $F(1, 114) = 25.425$ ,  $p < .000$ .

In an online course, students perceived high attractive professors with more effectiveness as an instructor,  $F(1, 114) = 51.066, p < .001$  and more expertise as an instructor,  $F(1, 114) = 12.422, p < .001$ , supporting H1 and H2. Students had more motivation to learn in the course,  $F(1, 114) = 84.202, p < .001$  and perceived they learned better through the course material,  $F(1, 114) = 39.088, p < .001$ , supporting H3 and H4. Furthermore, students were more satisfied with the course when the instructor was perceived with high attractiveness,  $F(1, 114) = 53.368, p < .001$ , supporting H5 (See Table 1 – Mean Levels of Dependent Variables).

There was an interaction effect between attractiveness of the instructor and age of the students on three of the dependent variables, satisfaction, expertise and effectiveness of the instructor (See Table 2 - Repeated Measures Analysis of Variance Results). Satisfaction levels were influenced by the interaction of age and attractiveness of the instructor,  $F(3, 114) = 2.760, p < .05$ . Participants that were over 46 years old had lower satisfaction levels when the instructor was not attractive in online courses. Levels of attractiveness appeared to also affect certain age ranges,  $F(3, 118) = 4.794, p < .003$  on the expertise of the instructor. The age range over 46 and older were most influenced by attractiveness of the instructor which affected their perception of expertise, followed by the age range 26-35, then 18-25 and lastly 36-45. The effectiveness of an instructor was also influenced by certain age ranges,  $F(3, 118) = 4.472, p < .005$ . The age range over 46 was the most influenced group, followed by age range groups 26-35, 18-25, and lastly 36-45. The interaction effects were not statistically significant for learning outcomes and motivation; however, the mean perception of certain age groups showed the same tendency (See Table 3 – Mean Levels of Dependent Variables Based on Age\*Attractiveness Factor).

## DISCUSSION

The purpose of this research was to examine the professor's attractiveness and its perceived impact to student's evaluation of course outcomes within the context of an online learning environment. Our study discovered that professor's attractiveness matters to students in the online learning environment. Our findings suggest that professor's attractiveness has a statistically significant effect on student learning, motivation, and satisfaction. Results also indicate that students perceive attractive professors with more expertise as an instructor. Although online course delivery offers various instructional methods, professors who teach online should be aware of their looks and appearances when delivering lectures or interacting with students using the face-to-face instruction method. Our findings are consistent with similar research done in the traditional classroom, which indicates that a professor's attractiveness is associated with higher student perceived learning, motivation, and satisfaction (Liu et al., 2013; Felton et al., 2004; Gurung & Vespia, 2007; Romano & Bordieri, 1989). However, this study was mainly interested in examining whether the effect also exists in an online course as distance learning is becoming more pervasive in education.

An interesting finding through the analysis was the influence of gender in the effect of instructor's perceived attractiveness between female and male students for motivation in the online course. The results showed that women had higher levels of motivation when the instructor was attractive ( $M_{\text{high}} = 5.415$  vs.  $5.231$ ),  $F(1, 120) = 4.913$ ,  $p = .029$ ) and women had very low levels of motivation in the course when the instructor was not attractive ( $M_{\text{low}} = 3.948$  vs.  $4.333$ ). However, when adding the variable: "Age", into the model, the influence of gender was diminished, which was another interesting discovery. The age difference of

participants in the effect of instructors' perceived attractiveness impacts satisfaction, instructor effectiveness and instructor expertise. The results showed that participants over the age 46, when compared to participants under age 46, perceived attractive instructors as having higher effectiveness ( $M_{46+} = 6.366$  vs. 5.783, 5.903, 5.671),  $F(1, 114) = 4.618$ ,  $p = .004$ ); having higher expertise ( $M_{46+} = 6.497$  vs. 5.825, 6.133, 5.799),  $F(1, 114) = 4.128$ ,  $p = .008$ ) and were more satisfied with the online course ( $M_{46+} = 6.254$  vs. 5.875, 5.827, 5.973),  $F(1, 114) = 2.760$ ,  $p = .045$ ). Similarly, these participants over the age 46 perceived not attractive instructors have lower effectiveness ( $M_{46+} = 3.969$  vs. 5.116, 4.573, 4.867), lower expertise ( $M_{46+} = 5.172$  vs. 5.825, 5.205, 5.777), and were less satisfied with the online course ( $M_{46+} = 4.177$  vs. 4.750, 4.202, 5.306). This interesting discovery leads to questions regarding why certain age groups, particularly older students, are influenced by attractiveness in online courses. Simonds and Brock (2014) found that older students have a stronger preference for videos of the professor lectures while younger students prefer more interactive learning options. Other studies found that older students were more active on discussion forums (Chyung, 2007), had higher levels of academic performance levels (Koh & Lim, 2012), invested more time and were more satisfied with online courses than younger students (DiBiase & Kidwai, 2010). However, research in the area of understanding how age interacts with attractiveness of an instructor is limited. Based on research in psychology, Foos and Clark (2011) state that older individuals are more experienced in many areas and used their judgment to perceive attractiveness in an individuals based on other things other than just the face. This could provide evidence on why older students who were influenced by attractiveness of the professor also had perceived higher levels of instructor expertise and

experience. When an older student perceived an instructor as not attractive, then the level of perceived instructor expertise and experiences also diminished.

Our study has several limitations that should be noted. First, the focus of our study is to examine whether attractiveness stereotype exist in online instruction. While we found evidence to support this claim, the results rely heavily on self-reported retrospective perception of the students. This may result in inaccurate recalling of events. Given that various technological tools are available to engage students online, further research should investigate the effect of synchronous (e.g. live video conference) and asynchronous (e.g. placing instructor's picture in an online forum) instruction design, as well as their subsequent effects on course satisfaction, learning, and motivation.

Online learning evolved from distance learning, which has been available for decades. The big change in the past decade has been the availability of cheap and ubiquitous communications technology and software. Distance learning has evolved from traditional written materials (e.g. paper, posts, prints) to digital files and from pre-recorded lectures (e.g. audio, television broadcasts, videos) to live interactive learning (e.g. video conferencing, live meetings, instant messaging). Furthermore, cheap, ubiquitous and fast Internet means that students and professors both do not need specialized and expensive equipment for sending and receiving the lectures. They can learn or teach from home, the office or even a Wi-Fi enabled coffee shop. Cheap hardware (i.e. laptops, smartphones, web-cams) and cheap software (i.e. apps) lowers the cost of technology that is available to students and professors. Conversely, demand for communication has encouraged software developers to create ever more clever and more specialized software. This gives professors lots of choice and allows them to choose the technologies that fit their teaching styles and that appeal to them.

However, not all professors are demonstrating effective use of interactive technologies in distance learning as academia overall often lags behind the general public. We believe the different adoption of technology present an opportunity for study. Looking at the literature, there is research that demonstrates interactive systems lead to better learning outcomes (Trentin, 1997). This is also shown to be true with distance learning (Katz, 2002) and Instant Messaging (IM) interaction in support of online teaching (Wang & Morgan 2008).

Following this work, the authors feel confident in that professors who use interactive systems will lead to higher learning outcomes and student satisfactions. While we did not control for the level of interaction, we suspect that an interactive instruction method would be positively correlated to course evaluation, student learning and overall satisfaction. Similar to the results by Allen and colleagues (2002), courses taught using online videoconference technology, will receive higher ratings than professor who do not use this technology (Allen, Bourhis, Burrell & Mabry, 2002). Consequently, we encourage future research to test the attractiveness effect while controlling for the level of interactivity.

Another limitation is that learning outcome reflects students' perception of how much they learned. This is also self-reported and does not measure actual learning, academic performance, or subject knowledge. We would like to see an experiment where the same course and material is taught in the same way, where the only difference is that the professor is presented as attractive and less attractive.

## **CONCLUSION**

Review of literature suggests that physical appearance matters within traditional classroom instruction from the perspectives of either the student or the professor. Past studies have indicated that teachers perceive attractive looking children more favorably. For

example, attractive looking students perceived as more socially competent (Vaughn & Langlois, 1983) and academically competent (Parks & Kennedy, 2007). Interestingly, meta-analysis indicates that attractive students correlate with actual intellectual competence (Jackson, Hunter, & Hodge, 1995). Other studies also discovered that teachers had higher expectations in school performance for physically attractive kids (Clifford & Walster, 1973) and demonstrated a higher teacher-student interaction in the classroom (Adams & Cohen, 1974). Attractive professors increase immediacy and increase teacher-student interactions and thereby increase learning outcomes.

In the present study, we examined whether professors' attractiveness also affect students in online instruction. The overall results demonstrate that this stereotype is significant and positively relate to student learning outcomes. While a teacher's image in the traditional classroom affects students' perception of their ability to teach and teaching effectiveness (Jackson, 1968; Calderhead, 1991; Lortie, 1975; Zeichner, 1980), our study reveals that this image is also important to maintain in an online course.

In conclusion, educators should acknowledge that a professor's looks clearly matter to students. This effect is well supported both in traditional classroom and online instruction. We hope that this study can bring more awareness to online instructors that human factors can also influence students' learning outcomes in distance learning. Professors who teach online should also maintain a professional appearance especially when engage in face-to-face instruction.

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Tables

Table 1: Mean Levels of Dependent Variables

Measure	Attractiveness Factor	Mean
Satisfaction	High	5.982
	Low	4.609
Expertise	High	6.063
	Low	5.495
Effectiveness	High	5.931
	Low	4.631
Motivation	High	5.392
	Low	4.152
Learning Outcome	High	5.642
	Low	4.697
Attractiveness Rank	High	4.427
	Low	3.869

Table 2: Repeated Measures Analysis of Variance Results

	Effectiveness		Expertise		Motivation		Learning Outcomes		Satisfaction		Attractiveness Rank	
	F	p	F	p	F	p	F	p	F	p	F	p
<b>Hotness</b>	51.0	.00	12.4	.00	84.2	.000	39.0	.00	53.3	.00	25.4	.000
	66	0	22	1	02		88	0	68	0	25	
<b>Hotness*Gender</b>	.009	.92	1.23	.26	2.65	.106	.006	.94	0.31	.57	.771	.382
		3	9	8	2			0	7	5		
<b>Hotness*Age</b>	4.61	.00	4.12	.00	1.80	.150	2.07	.10	2.76	.04	.693	.558
	8	4	8	8	9		6	7	0	5		

<b>Hotness*Gender*Age</b>	.885	.45	.694	.55	.388	.762	1.05	.37	.820	.48	.841	.474
		1		7			2	2		6		

Table 3: Mean Levels of Dependent Variables Based on Age\*Attractiveness Factor

<b>Age Range</b>	<b>Attractiveness Factor</b>	<b>Effectiveness</b>	<b>Expertise</b>	<b>Motivation</b>	<b>Learning Outcome</b>	<b>Satisfaction</b>	<b>Attractiveness Rank</b>
<b>18-25</b>	High	5.783	5.825	5.433	5.620	5.875	4.640
	Low	4.867	5.825	4.104	4.920	4.750	4.150
<b>26-35</b>	High	5.903	6.133	4.879	5.431	5.827	4.395
	Low	4.573	5.205	3.849	4.313	4.202	3.645
<b>36-45</b>	High	5.671	5.779	5.328	5.682	5.973	4.302
	Low	5.116	5.777	4.436	5.182	5.306	3.655
<b>46+</b>	High	6.366	6.497	5.929	5.853	6.254	4.369
	Low	3.969	5.172	4.220	4.374	4.117	4.024