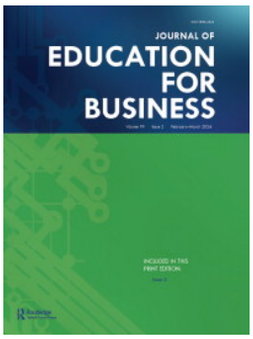

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College professor perceptions of effective professor characteristics: A cross-cultural study

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ABSTRACT

This study explores college professor perceptions of effective professor Characteristics through the lens of Media Naturalness Theory (MNT). A survey questionnaire was administered to samples of college professors in two countries (USA and Qatar) regarding their perceptions of effective professor's characteristics. Demographic variables such as gender, age, discipline, rank, and teaching style were included in the questionnaire. The results of nonparametric analysis revealed significant differences in professors' responses between the two samples. However, these differences were in the level of their ratings (e.g. very important versus important). The top five-rated characteristics were similar in both countries for each component of the media naturalness theory. Speech and body language components had the highest rating by professors in both countries. While gender was the most significant demographic factor that influenced professors' perceptions for the American sample, discipline was the most critical factor for the Qatari sample. The second most crucial factor for both countries was teaching style. Even though the two groups differed in their ratings of effective professor characteristics, which could be partially explained by the cultural background differences between the two countries, professors agreed to be respectful of students, make class expectations clear, and explain course material clearly and concisely are the most important characteristics in both instruction delivery modes (face-to-face and online). Theoretical and practical implications are discussed.

KEYWORDS

Effective professor characteristics; face-to-face instruction mode; Hofstede cultural dimensions; media naturalness theory; online instruction mode

Introduction

The effectiveness of college professors is a fundamental element in the educational process. Higher education institutions spend substantial time, effort, and money to ensure that a high-quality education is delivered to learners and, more importantly, prepare these learners on a personal and professional level for the real world. The role of professors is not only to teach and transfer the knowledge but also to stimulate students' interests, motivate them and create a positive change by becoming a civilized agents in their communities (Cheruvalath, 2017; Després-Bedward et al., 2018). Knowing the effective professors' characteristics has now become more crucial than before due to the evolution in delivering modes of teaching (face-to-face, hybrid and online), especially with the new shift to online education due to the COVID-19 crisis (Li et al., 2022). Evidently, it is more critical to comprehend and recognize the characteristics that make professors effective from their perspectives from various cultures. Limited studies (Buskist & Keeley, 2018; Martin et al., 2019; Simendinger et al., 2017; Sims & Baker, 2021; Zayac et al., 2021) have examined the professors' perceptions of effective professor characteristics, which present a challenge for the educational profession, particularly for recruiting, training, retaining, and evaluating professors. To help fill this void in the literature, this study attempts to identify characteristics of effective professors, using the lens of the five components of the media naturalness theory, including characteristics valued by professors from two different countries (USA and Qatar), as they represent two distinct culture values according to Hofstede's culture dimensions (Hofstede Insights, 2023). This study, which is to the best of our knowledge, is among the first studies that examines effective professor characteristics for both face-to-face and online instruction delivery modes. Hence, this study will explore the following research questions:

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RQ1: Is there a significant difference in perceptions of the importance of effective professor characteristics between professors in the USA and Qatar?

RQ2: Does each characteristic have the same perceived importance regardless of the mode of instruction delivery (face-to-face and online)?

RQ3: Do gender, age, discipline, professor rank, teaching style, and prior online experience influence college professor perceptions of the importance of effective professor characteristics?

Theoretical Framework

Media naturalness theory

The Media Naturalness Theory (MNT) which was introduced by Kock (2001) consists of five key elements: 1) high degree of co-location where the participants are in a common physical place, and they can see and hear each other; 2) high degree of synchronicity allows the participants to respond to stimuli promptly and spontaneously; 3) the ability to convey facial expressions; 4) the ability to detect and transmit body language and 5) the ability to transmit and receive speech (Kock, 2005; Weiser et al., 2018). The naturalness of the communication medium created can be defined by an e-communication technology based on the degree to which the technology selectively incorporates (or suppresses) those five elements. Media naturalness can be defined as the capacity of communication media to support co-located and synchronous communication by employing facial expressions, body language, and speech to exchange information and knowledge (Kock, 2005). It argues that the forms of communication that deviate from 'natural' communication are likely to put the brain under pressure as the mind has been designed for that type of communication. Kock (2001) identified key-dependent constructs that are affected by media naturalness theory: cognitive effort, communication ambiguity, and physiological arousal. A study conducted by Blau et al., (2017) aimed to gain insights into the tradeoff between media naturalness and the influence of personality traits on academic achievement and perceived learning in various learning environments. The findings revealed that one-way videoconferencing, which is considered a less natural learning condition, improved the cognitive aspect of perceived learning.

According to Kock et al. (2007), users will perceive media that conceal parts of face-to-face contact (e.g. the ability to convey oral speech and facial expressions), even if selectively, as less natural than the face-to-face medium. The media naturalness model also predicts that a decrease in the naturalness of a communication medium will result in increased communication ambiguity, increased cognitive effort (or mental effort) required from users, and a decrease in the excitement users feel when completing a task through the medium. Since face-to-face delivery mode, compared to online mode, meets the five components of the media naturalness theory (at their highest level), we contend that the importance of professors' characteristics would differ depending on the instruction delivery mode. For example, characteristics that are related to facial expression, body language, and co-location are more critical in face-to-face than in online teaching mode. In contrast, speech and synchronicity are essential regardless of the delivery mode (Kock, 2005).

Hofstede cultural dimensions

The second theoretical framework employed in this study is the Hofstede Cultural Dimensions; Figure 1 presents the differences in the cultural dimensions between USA and Qatar. It can be noticed that there is a noticeable difference between the two countries in power distance, individualism and uncertainty avoidance dimensions.

Power distance is the extent to which the less powerful individuals in a country accept that power is distributed unequally (Hofstede Insights, 2023). Qatar demonstrates a notable performance in this area, as evidenced by its aggregate score of 93. This indicates a societal inclination toward accepting a hierarchical structure wherein individuals are assigned specific positions, without necessitating additional rationale. The concentration of power is a prevalent phenomenon, when managers rely on the compliance of their subordinates in exchange for safeguarding against the wielders of power. On the other hand, the United States has a relatively low score of 40 on this particular dimension. This is further substantiated by the emphasis placed on the principle of equal rights throughout all domains of American culture and governance. In American organizational contexts, there exists a mutual expectation among both managers and employees for consultation and the regular dissemination of information (Hofstede Insights, 2023). Related to learning and teaching styles, cultures with high power distance (e.g. Qatar) revolves around teacher-centered education, teacher initiation of communication, and teacher providing clear guidelines to

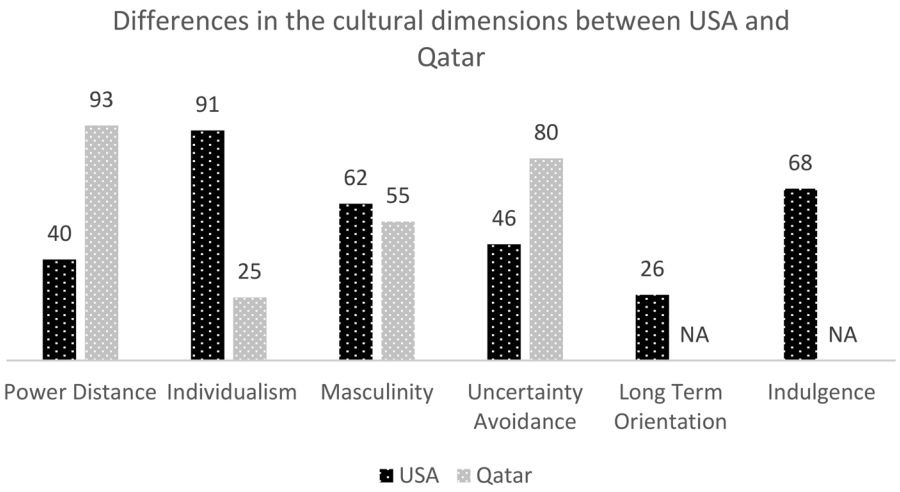

Figure 1. Differences in the cultural dimensions between USA and Qatar.
Source: https://www.hofstede-insights.com/product/compare-countries/

students. However, in cultures with low power distance (e.g., USA), students are the center of the learning process, teachers expect students to initiate communication, and find their own way of learning (Hofstede, 2008).

The individualism is the degree of interdependence that a society maintains among its members. Qatar exhibits a rather low performance on this particular category, as indicated by its aggregate score of 25, so it can be classified as a collectivistic society. People in collectivist cultures are members of "in groups" that look after them in exchange for unwavering devotion. The societal structure promotes the cultivation of robust interpersonal connections, wherein individuals assume accountability for the well-being of their fellow group members. Within this cultural context, instructor–student relationship is viewed through a moral lens, similar to familial connections. On the contrary, a score of 91 suggests that the United States exhibits characteristics of an individualistic culture. The societal structure is characterized by a loose cohesion, wherein individuals are expected to primarily prioritize their own well-being and that of their immediate families, rather than heavily relying on authorities for assistance (Hofstede Insights, 2023).

Students in collectivism societies (e.g. Qatar) expect to learn how to do things, they will only speak up in class when called upon personally by the teacher. On the other hand, students from individualistic cultures (e.g. USA) expect to learn how to learn, will speak in class when they want or need to (Hofstede, 2008).

Uncertainty avoidance reflects the way a society deals with the knowledge that the future can never be predicted. Should we try to influence the future or just let it happen? Qatar exhibits a notable performance on this particular category, as evidenced by its overall score of 80. The score pertaining to the uncertainty avoidance component indicate a strong inclination toward minimizing exposure to unforeseen circumstances. Countries characterized by a high level of uncertainty avoidance tend to uphold strict systems of belief and conduct, displaying a low tolerance for unconventional behavior and ideas. However, the United States has a below-average performance on this dimension, as evidenced by its relatively low score of 46. The American populace exhibits a tendency toward greater levels of tolerance when it comes to accommodating diverse ideas and perspectives, hence upholding the principle of freedom of expression. Simultaneously, it may be observed that Americans exhibit a lesser inclination toward adherence to numerous regulations and demonstrate a comparatively lower degree of emotional expressiveness when compared to nations that score higher in these aspects (Hofstede Insights, 2023). In strong uncertainty avoidance societies (e.g. Qatar), students prefer a structured learning environment and they are allowed to behave emotionally. In societies with a weak uncertainty avoidance (e.g. USA), students prefer an unstructured learning environment and they need to control their emotions (Hofstede, 2008).

Based on the above description of the Hofstede Framework, it can be clearly stated that individuals from low power distance, individualistic and weak uncertainty avoidance societies are more adaptable to online learning than face-to-face learning environment. Where, the individuals from high power distance, collectivism and strong uncertainty avoidance

are more adaptable to face-to-face than online learning environment (Wang, 2007).

Research framework

Through the lens of media naturalness theory and Hofstede cultural dimensions, our research model proposes that effective professor characteristics, categorized into five components of the media naturalness theory, will differ based on instruction delivery mode (online vs. face-to-face), national culture (USA vs. Qatar), and demographic factors. As shown in Figure 2, the importance of effective professor characteristics, as categorized into the five components of media naturalness theory, are hypothesized to receive different importance ratings by professors with respect to the culture factor, instruction delivery modes, and professor demographic factors. In this study, the culture factor was represented using samples from two different countries (USA and Qatar), since they represent different cultural spectrum on the Hofstede cultural dimensions as reported in Figure 1. The two instruction delivery modes included in this study were face-to-face and online modes. We believe that effective professor characteristics would receive different importance ratings by professor based on the instruction delivery mode. The third factor that expected to influence professor's rating of effective characteristics is the demographic factors such gender, age, discipline, teaching style, rank, and online teaching experience.

Hypotheses

In this study, we used the term professor characteristics since it encompasses traits, skills, and competencies. Characteristics are the defining attributes of an individual's personality, behavior, or moral values. Traits, which refer to inherent personal qualities, includes honesty, integrity, confidence, commitment, and passion (Medina-Rivera et al., 2017). While skills are defined as abilities, arts, neatness, or properties with which anything is done (Medina-Rivera et al., 2017).

Zamani et al. (2020) reported four dimensions of the professor effectiveness, which include knowledge, teaching skills, social skills, and personal traits.

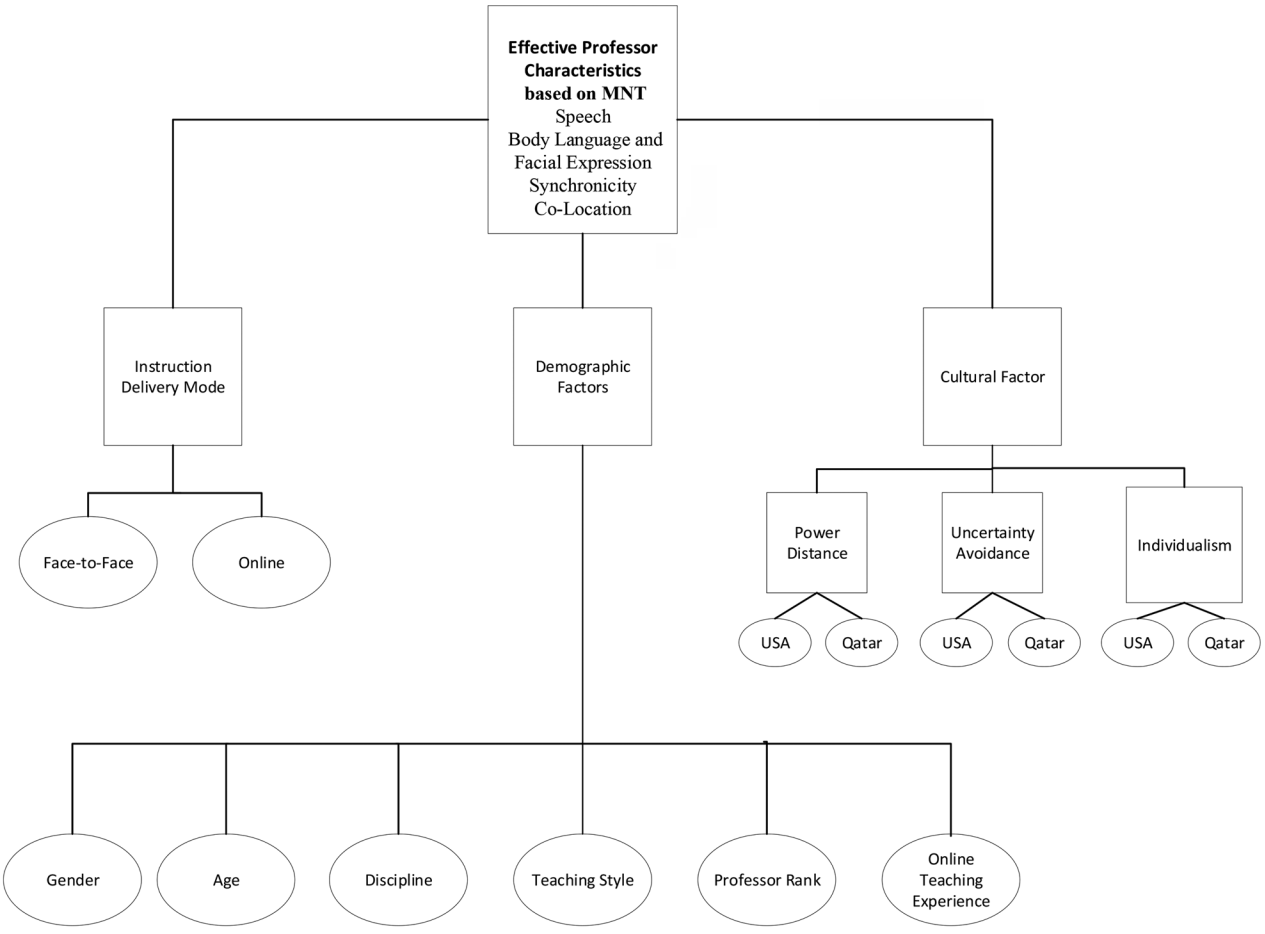

Figure 2. Research model.

According to their findings, personality traits were the most important dimension, followed by the social skills. In another study conducted by Phillips et al. (2017), it was found that the essential characteristics for effective instructors were clear communication, fairness, respect, preparedness, connection with students, and positive attitude. Effective teaching, which is reflected by professor's knowledge, teaching strategies, and behaviors, has a significant impact on student outcomes (Hawthorne, 2022).

With respect to faculty perspective on effective professor characteristics, Zayac et al. (2021) reported that faculty perceived enthusiasm as the most important characteristic. Buskist and Keeley (2018) analyzed twelve studies about faculty ratings of Teacher Behavior Checklist items (TBC). The 12 studies agreed that being knowledgeable, enthusiastic, promoting critical thinking and intellectual stimulation are the three most important elements of excellent teaching.

English and Lacroix (2020) reported that students who enroll in an online course usually seek a highly organized class. They need a clear guide on the syllabus and all course-related material. On the other hand, students in face to face setting seek an approachable and friendly professor who maintains an interactive session and involves students' in-class experience (e.g. body and facial expression components). In a study conducted by Haug (2019), students prefer the professors who motivate students inside and outside the classroom. Evans (2020) examined if there was a link between online and traditional professor personality qualities and course completion rate. Because the sample means for extroversion and agreeableness were higher for traditional professors than for online professors, this suggests that professors with these characteristics may prefer to teach in person. This may lead to conclude that some of the MNT components such colocation, facial expressions and body language are more difficult to convey online, leading to potential misunderstandings or misinterpretations. So, they are more needed in face-to-face settings than online ones (Rusli et al., 2019).

Regarding the culture effect on teaching, Hecht and Kahrens (2021) studied the impact of culture of British and German students and teachers on teaching styles. The findings affirmed that German professors have a higher chance of implementing teacher-centered styles than British professors. The findings of this study provide confirmation of the potential impact of Hofstede's cultural dimensions, specifically in relation to uncertainty avoidance dimension since the two countries, according to Hofstede Insights (2023) have distinct scores on this dimension (UK 35 and Germany 65). Martin et al. (2019) examined the perceptions of American and German faculty of the importance of competencies and efficacy of online teaching. It was found that German professors rated the four competencies (Course Design, Course Communication, Time Management and Technical Competence) lower than the American professors in terms of importance and self-efficacy. In a study conducted by Schleef (2009), a cross-cultural examination was undertaken to examine the academic style utilized in a face-to-face classroom setting. According to the research, American classrooms demonstrated a higher level of interactivity compared to German classrooms. This was attributed to the American teachers' utilization of questioning techniques to foster student–teacher dialog. In contrast, German lecture classrooms were characterized by a more prevalent use of read-out speech. In a study conducted by Roach and Byrne (2001), it was shown that American instructors exhibited notably higher levels of power usage, affinity-seeking behavior, and nonverbal immediacy in comparison to their German counterparts. Simendinger et al. (2017) found that professors from different countries differed on what characteristics contribute to effective teaching. For example, the attribute "Illustrates current knowledge of the subject matter" was rated differently across countries. While professors from the USA rated this attribute as the most important factor for teaching effectiveness, professors from France rated it fourteenth. One could contribute such differences in professors ratings in the three countries to their differences according to the Hofstede cultural dimensions, particularly in the uncertainty avoidance and power distance dimensions.

According to Gao and Liu (2013), they found that participants from both the United States and China identified six distinct categories of attributes that accurately depict effective teachers. These categories include content and pedagogical knowledge, a professional attitude toward teaching and students, adaptable classroom performance, the ability to establish rapport, the capacity to motivate students, and positive personality traits. This research affirms that the cultural background of teacher candidates from the United States and China influences their perceptions regarding the attributes that make a teacher effective. The impact of culture is notably substantial in various domains, including the professional demeanor of educators, their ability to establish rapport, and their personal charisma. American teacher candidates exhibited a higher level of interest in the professional attitude of teachers toward both teaching and students, while displaying a comparatively lower level of interest

in the ability of teachers to establish rapport and exhibit charismatic personality traits, in contrast to their Chinese counterparts. There was no significant difference observed between American and Chinese teacher candidates in terms of their knowledge of the subject, classroom performance, and ability to motivate students (Gao & Liu, 2013).

Based on the above-mentioned background, it can be clearly stated that professors from low power distance, individualistic and weak uncertainty avoidance societies perceived the effective professor characteristics that are related to speech and synchronicity are more important than other characteristics. However, the individuals from high power distance, collectivism and strong uncertainty avoidance societies perceived the effective professor characteristics that are related to body language and facial expression and co-location are more important than other characteristics.

Demographic factors effect

The instructor demographics have been the focus of researchers in many aspects related to teaching effectiveness and teaching evaluation. For example, Banks (2017) examined the impact of instructor demographics like race and experience on teaching effectiveness ratings. The results indicated that race and instructor teaching experience were significant contextual variables in assessing the teaching effectiveness rating. There is a continuous debate on who is effective instructor the young or the old? For example, among typical comments as reported by Elementary matters (2017), while young professors are enthusiastic and energetic, technology fast adopters, old professor are less flexible, burned out, and have nervousness from using technology in the classroom. Moreover, Fernández-García et al. (2019) reported that students in high schools favor young teachers believing that these teachers can better understand and connect with their lived experience. On the other hand, old professors had more teaching experience and could easily handle students with challenges compared to young professors who have less teaching experience and face difficulty in handling challenging students.

There are mixed findings with respect to the impact of professor's demographics on teaching effectiveness. For example, Stonebraker and Stone (2015) indicate that as faculty members get older, regardless of their gender and discipline, there is a negative impact on the ratings they receive from students in terms of teaching effectiveness. Moreover, Kinney and Smith (1992) reported that there is a significant relationship between teaching effectiveness and age; however, this relationship is influenced by professor's discipline in such a way the older professors are, the more effective they are in social sciences and humanities disciplines, compared to professors in the physical and biological sciences. On the other hand, Daud and Kassim (2011) reported that there was no notable difference in rated teaching effectiveness across teaching staff of diverse ages and gender. Moreover, in a more recent study by Tran and Do (2022), it was discovered that the instructor's age, seniority, gender, and qualification had no statistically significant impact on rated teaching efficacy. In a study by Martin et al. (2019), it examined the perceptions of American and German faculty of the importance of competencies and efficacy of online teaching. It was found in both countries that female faculty, compared to male faculty perceived the relevance of course communication and technical skills much higher. Moreover, in factors related to the importance of competencies, it was found that course design and technical competences can significantly be related to the faculty rank. For the age factor, it was negatively associated with self-efficacy to use technology.

Based on the above literature and due to the exploratory nature of this study, we formulate the following hypotheses as shown in Figure 3.

Methodology

Instrument development, data collection, and statistical techniques

A survey questionnaire was administered to samples of professors in the USA and Qatar during the academic year of 2021–2022. It was administered in English and Arabic to the Qatari sample. However, a rigorous translation process (e.g. translating from English to Arabic and then from Arabic to English) was employed. The questionnaire items were adopted from Moorman (2004) and Alshare and Miller (2009). Participants responded to statements using a 5-point Likert scale, which ranged from not important (1) to very important (5).

Data analysis

While the American sample included 181 professors, the Qatari sample included 164 professors. As shown in Table 1, the American sample had approximately the same percentages of male and female professors; the Qatari sample had a larger percentage of male professors (62% males). Most of the American sample was above 49 years old (59%), compared to 41% of

H1a: The perceived importance of professor characteristics related to each media naturalness component for face-to-face mode significantly differs among professors in the two countries.
H1b: The perceived importance of professor characteristics related to each media naturalness component for online mode significantly differs among professors in the two countries.
H2a: For the USA sample, there is a significant difference in the perceived importance of professor characteristics related to each media naturalness component between online and face-to-face instruction delivery modes.
H2b: For the Qatar sample, there is a significant difference in the perceived importance of professor characteristics related to each media naturalness component between online and face-to-face instruction delivery modes.

For each country:

H3a: there is a significant difference in the perceived importance of professor characteristics related to each media naturalness component between male and female professors.
H3b: there is a significant difference in the perceived importance of professor characteristics related to each media naturalness component between young and older professors.
H3c: there is a significant difference in the perceived importance of professor characteristics related to each media naturalness component among professors' disciplines.
H3d: there is a significant difference in the perceived importance of professor characteristics related to each media naturalness component among professors' ranks.
H3e: there is a significant difference in the perceived importance of professor characteristics related to each media naturalness component among professors' teaching styles.
H3f: there is a significant difference in the perceived importance of professor characteristics related to each media naturalness component between professors who had online experience and those who had not.

Figure 3. List of hypotheses.

Table 1. Frequency distributions of key variables by country.

	USA (n_1=181)		Qatar (n_2=164)	
Variable	No. of responses	(%)	No. of responses	(%)
Gender:				
Male	95	52.50	102	62.2
Female	86	47.50	62	37.8
Age:				
≤39 years	26	14.30	31	18.9
40–49 years	49	27.10	66	40.2
Above 49 years	106	58.60	67	40.9
Rank:				
Assistant	62	34.25	54	32.93
Associate	52	28.73	62	37.80
Professor	67	37.02	48	29.27
Discipline:				
Business	64	35.4	30	18.3
Sciences	36	19.8	38	23.2
Arts	26	14.4	63	38.4
Other	55	30.4	33	20.1
Taught online courses:				
Yes	166	91.7	142	86.6
No	15	8.3	22	13.4
Teaching style:				
Formal authority	27	14.9	21	12.8
Demonstrator	40	22.1	35	21.3
Facilitator	106	58.6	106	64.6
Delegator	8	4.4	2	1.3

the Qatari sample. Each sample included about the same percentages across professors' ranks (assistant, associate, and professor). Additionally, both samples included professors from disciplines such as business, sciences, and Arts. The vast majority of the professors in both countries had taught online courses (92% of American sample, compared to 87% of Qatari sample). This should not be surprising since the survey was conducted during the COVID-19 pandemic. For professors' teaching styles, for both samples, about

two-thirds reported that their teaching style was being "facilitators," followed by "demonstrators."

The original survey questionnaire included 44 items; however, employing items reduction process (Factor Analysis) the items were reduced to 27 items. Based on the factor analysis on the remaining items and consulting with experts in the field, the 27 items were grouped according to the five components of media naturalness theory (MNT) as shown in the appendix. The reliability of the items for each MNT component was assessed using Cronbach's alpha and reported in Table 2. The values ranged from 0.64 to 0.82. However, the vast majority of the alpha values are greater than 0.70. According to Hair et al. (2010), a value of 0.60 for Cronbach's alpha is acceptable for exploratory studies. The list of characteristics for each component is reported in the appendix.

Results of the study

A comparison of professors' perceptions

Table 3 revealed that there are significant differences in professors' perceptions of characteristics related to speech and co-location components between the two countries for the case of face-to-face mode (p values 0.006 and 0.001, respectively). On the other hand, there were no significant differences in professors' perceptions of characteristics related to body language, facial expression, and synchronicity components between the two countries. Regarding the online mode, there were significant differences in professors' perceptions of characteristics related to synchronicity and co-location components between the two countries with p values of 0.001 and 0.001, respectively. Thus, hypotheses H1a and H1b were partially supported. The most important characteristics were those are related to the speech component in face-to-face and online modes for both countries. The second most important characteristics were those are related to body language and facial expression component in the face-to-face mode for both countries. However, for the case of online mode, the second most important characteristics were those are related to synchronicity component for the American sample and body language and facial expression for the Qatari sample.

The impact of the mode of delivering instruction on professor characteristics

The results indicated that there were significant differences in professors' perception of the importance of professor characteristics in four components between face-to-face and online modes for both countries with p value of 0.001, except the synchronicity component for the Qatari sample as shown in Table 4. However, these differences were in the same direction; only the strength of the ratings was different. Therefore, hypothesis H2 was supported. We further discuss these findings in the discussion section.

The impact of demographic Variables on professors' ratings

The Kruskal-Wallis procedure, as shown in Table 5, revealed that while gender, discipline, and teaching style were significant, age, rank, and online teaching experience were not significant. Thus, hypotheses H3a-f were partially supported. There were significant

Table 2. Reliability values (Cronbach's alpha) for the components.

	USA		Qatar		Pooled sample	
Media naturalness components	F-2-F	online	F-2-F	online	F-2-F	online
Speech	0.72	0.75	0.71	0.82	0.72	0.78
Body language and facial expression	0.67	0.71	0.64	0.69	0.65	0.70
Synchronicity	0.76	0.71	0.75	0.78	0.76	0.77
Co-location	0.64	0.65	0.66	0.70	0.66	0.69

Table 3. The results of the Mann-Whitney test for both countries.

	USA		Qatar		
	Mean	Std. Dev.	Mean	Std. Dev.	p value
Face-to-face mode					
Speech	4.62	0.326	4.52	0.344	**.006**
Body language and facial expression	4.55	0.397	4.49	0.400	.128
Synchronicity	4.12	0.575	4.03	0.566	.098
Co-location	4.50	0.562	4.16	0.670	**.001**
Online mode					
Speech	4.45	0.460	4.37	0.501	.099
Body language and facial expression	4.05	0.621	4.10	0.579	.385
Synchronicity	4.27	0.523	4.04	0.600	**.001**
Co-location	4.15	0.600	3.78	0.811	**.001**

Table 4. The results of two related samples test (wilcoxon) (USA and Qatar).

	USA			Qatar		
	Mean			Mean		
Media naturalness components	F-2-F	online	*p* value	F-2-F	Online	*p* value
Speech	4.62	4.45	**.001**	4.52	4.37	**.001**
Body language and facial expression	4.55	4.05	**.001**	4.49	4.10	**.001**
Synchronicity	4.12	4.27	**.001**	4.03	4.04	.294
Co-location	4.50	4.15	**.001**	4.16	3.78	**.001**

Table 5. The results of impact of demographic factors (*p* value*) for Kruskal–Wallis.

Media naturalness components	Gender		Age		Discipline		Teaching Style		Rank		Online Teaching Experience	
	USA	Qatar	USA	Qatar	USA	Qatar	USA	Qatar	USA	Qatar	USA	Qatar
Face-to-face mode												
Speech	**0.001**	**0.043**	NS*	NS	0.01	NS	NS	NS	NS	NS	NS	**0.027**
Body language and facial expression	**0.004**	NS	NS	NS	NS	**0.039**	NS	NS	NS	NS	NS	NS
Synchronicity	**0.025**	**0.047**	NS	NS	**0.036**	NS	NS	NS	NS	NS	**0.049**	NS
Co-location	**0.01**	NS	NS	**0.032**	NS	NS	NS	NS	NS	NS	NS	NS
Online mode												
Speech	**0.001**	NS	NS	NS	**0.001**	**0.008**	NS	**0.018**	NS	NS	NS	NS
Body language and facial expression	**0.015**	NS	NS	NS	**0.003**	**0.001**	**0.05**	**0.026**	NS	NS	NS	NS
Synchronicity	NS	**0.038**	NS	NS	NS	0.011	NS	**0.004**	NS	NS	NS	NS
Co-location	**0.003**	NS	NS	NS	NS	**0.03**	**0.05**	**0.002**	NS	NS	NS	NS

*p value: compared to .05; NS: not significant.

differences in the perceived importance of professor characteristics between male and female American professors in all components for both modes (p values .001, .004, .025, .01 for speech, body language, synchronicity, and co-location), except for synchronicity in the case of online mode. On the other hand, only two components (speech with p value of .043 and synchronicity with p value of .047) for face-to-face mode and synchronicity (p value of .038) for the case of online mode were significant in the case of the Qatari sample. For the USA sample, there were significant differences among disciplines in speech (p value is .01) and synchronicity (p value is .036) in the case of face-to-face mode and speech (p value is .001) and body language (p value is .003) for online mode. For the Qatari sample, only body language was significant (p value is .039) in face-to-face mode, but all components were significant for the online mode with p value less than .05 as shown in Table 5. Only body language (p value is .05) and co-location (p value is .05) in the online mode were significant for the USA sample for teaching style. All components in the online mode were significant for the Qatari sample with p values less than .05.

It should be noted that for discipline and teaching style components, multiple comparisons were performed at level of significant of 0.05. The results are summarized in Table 6. Female professors, compared to their counterpart male professors, in both countries had higher ratings of importance for all media naturalness components in both modes. Professors from Arts College, compared to professors from Sciences and Business colleges, had a higher rating.

Discussion

Regardless of their country, professors agreed on the most important characteristics for effective professors. However, they differed in their strength of ratings. Moreover, professors in both countries agreed on the rating of importance of the characteristics related to speech and body language and facial expressions. They rated these characteristics as very important. On the other hand, they rated synchronicity-related characteristics as important. Concerning ratings of the same characteristics for online mode, professors in both countries rated all characteristics related to four components as important. In general, professors in both countries felt that the characteristics related to speech, body language, and co-location are more important in the face-to-face mode than in the case of online

Table 6. A Multiple comparisons for significant demographic factors.

Media naturalness components	Gender		Discipline		Teaching style	
	USA	Qatar	USA	Qatar	USA	Qatar
Face-to-face mode						
Speech	F > M	F > M	Arts > Sciences Arts > Business	NS*	NS	NS
Body language and facial expression	F > M	NS	NS	Arts > Sciences Business > Sciences	NS	NS
Synchronicity	F > M	F > M	Arts > Business	NS	NS	NS
Co-location	F > M	NS	NS	NS	NS	NS
Online mode						
Speech	F > M	NS	Arts > Business Sciences > Business	Arts > Sciences Arts > Business	NS	Facilitator > Formal
Body language and facial expression	F > M	NS	Arts > Business Sciences > Business	Arts > Sciences Business > Sciences	Facilitator > Formal Facilitator > Demonstrator	Facilitator > Demonstrator
Synchronicity	NS	F > M	NS	Arts > Sciences Business > Sciences	NS	Facilitator > Formal
Co-location	F > M	NS	NS	Arts > Sciences Business > Sciences	Facilitator > Demonstrator	Facilitator > Demonstrator

*. NS: not significant at 0.05.

mode. These findings were consistent with prior research (Haug, 2019; Kock, 2005; Phillips et al., 2017; Zayac et al., 2021), in which they reported respect, enthusiasm, concerning about students, having clear communication are essential characteristics for effective professors. On the other hand, they felt that characteristics related to synchronicity such as scheduling and organizing course material in a way that keeps students up to date and providing access to course material are more important in the case of online teaching mode. This finding is consistent with a previous study (English and Lacroix, 2020), in which they reported that students expect well-organized class and clear guidelines in the course related components; especially, for the online teaching modality.

Figures 4 and 5 examine the individual characteristic under each component of the media naturalness theory. One can observe that both groups indicated that "respectful for students" is an essential quality indicator for an effective professor for both modes, as shown in Figure 4. This finding similar to the findings by Zamani et al. (2020) and Phillips et al. (2017) in which they reported that personality traits such as respect and fairness were the most important characteristics for professor's effectiveness. The second most important characteristic was "making class expectation clear" in the case of the American sample, and "explaining course material clearly and concisely" for the Qatari sample. On the other hand, the least two important characteristics in the speech component for both teaching modes in the two countries were "having a sense of humor" and "using students' names in the class."

For the body language and facial expression component, "Demonstrating the importance and significance of the subject matter" was the most important characteristic for both teaching modes for the American sample. This result confirmed a prior study finding by Buskist and Keeley (2018) that is mastering the subject matter and being enthusiastic are the most important elements of teaching effectiveness. While "Is enthusiastic in class" was the second most important characteristic for face-to-face mode, "Is concerned about students" was the second most important characteristic for the online mode. A similar finding was reported by Schleef (2009) which found that American professors use questioning approach to enhance professor–student interaction. On the other hand, professors in Qatar felt that being enthusiastic in class and using good examples for content application are the most important characteristics for face-to-face and online modes, respectively. The difference in rating of effective teaching characteristics by professors from USA and Qatar were supported by prior research which it could be contributed to their cultural differences (Gao and Liu, 2013; Simendinger et al., 2017).

It should be noted that professors in both countries indicated that scheduling course work in ways that encourage students to stay up to date in their work and give rapid feedback on tests/assignments as the most important characteristics in synchronicity component. Additionally, professors felt that providing access to course material via websites is also very important, especially for online mode. The least important characteristic for the synchronicity

	Face-to-Face			
Speech	USA		**Speech**	Qatar
Is respectful of students?	4.9		Is respectful of students?	4.83
Makes class expectation clear?	4.87		Explain course material clearly and concisely?	4.82
Is courteous?	4.83		Makes class expectation clear?	4.71
Has good verbal communication?	4.82		Has good verbal communication?	4.7
Explain course material clearly and concisely?	4.81		Is courteous?	4.68
Is able to command the class' attention without shouting?	4.69		Is able to command the class' attention without shouting?	4.68
Communicates class rules?	4.65		Inspire students to set and achieve goals which really challenged them?	4.45
Inspire students to set and achieve goals which really challenged them?	4.49		Communicates class rules?	4.44
Has a sense of humor?	4.12		Uses students' names?	4.09
Uses students' names?	4.01		Has a sense of humor?	3.87
Body Language			**Body Language**	
Demonstrates the importance and significance of the subject matter?	4.81		Is enthusiastic in class?	4.68
Is enthusiastic in class?	4.79		Uses good examples for content application?	4.66
Is concerned about students?	4.78		Demonstrates the importance and significance of the subject matter?	4.65
Uses good examples for content application?	4.72		Make eye contact with students during the class?	4.55
Make eye contact with students during the class?	4.66		Is concerned about students?	4.54
Has a professional appearance?	4.24		Has a professional appearance?	4.28
Has charisma?	3.86		Has charisma?	4.07
Synchronicity			**Synchronicity**	
Schedules course work in ways which encourages students to stay up-to-date in their work?	4.56		Schedules course work in ways which encourages students to stay up-to-date in their work?	4.43
Gives rapid feedback on test/assignment?	4.54		Gives rapid feedback on test/assignment?	4.35
Stimulates students to intellectual effort beyond that required by most courses?	4.53		Stimulates students to intellectual effort beyond that required by most courses?	4.32
Provides access to course material via web sites?	4.24		Provides access to course material via web sites?	4.16
Seeks feedback from students on the course web site content?	4.13		Seeks feedback from students on the course web site content?	3.97
Provides students access to frequently asked questions?	3.78		Provides students access to frequently asked questions?	3.84
Requests students to report on their progress in the class weekly?	3.06		Requests students to report on their progress in the class weekly?	3.13
location			**location**	
Is approachable in and out of class?	4.81		Is approachable in and out of class?	4.52
Is available outside class?	4.45		Encourages student/faculty interaction outside of class time? (office visits, chat rooms)	4.05
Encourages student/faculty interaction outside of class time? (office visits, chat rooms)	4.24		Is available outside class?	3.93

Figure 4. Items rank order for face-to-face across country.

		Online		
Speech	USA		**Speech**	Qatar
Makes class expectation clear?	4.91		Is respectful of students?	4.7
Is respectful of students?	4.83		Explain course material clearly and concisely?	4.7
Is courteous?	4.81		Makes class expectation clear?	4.66
Explain course material clearly and concisely?	4.77		Has good verbal communication?	4.59
Has good verbal communication?	4.6		Is courteous?	4.48
Communicates class rules?	4.59		Is able to command the class' attention without shouting?	4.37
Inspire students to set and achieve goals which really challenged them?	4.44		Inspire students to set and achieve goals which really challenged them?	4.3
Is able to command the class' attention without shouting?	4		Communicates class rules?	4.25
Has a sense of humor?	3.93		Uses students' names?	3.92
Uses students' names?	3.72		Has a sense of humor?	3.79
Body Language			**Body Language**	
Demonstrates the importance and significance of the subject matter?	4.76		Uses good examples for content application?	4.57
Is concerned about students?	4.75		Demonstrates the importance and significance of the subject matter?	4.52
Uses good examples for content application?	4.7		Is enthusiastic in class?	4.43
Is enthusiastic in class?	4.55		Is concerned about students?	4.41
Has a professional appearance?	3.64		Has charisma?	3.9
Has charisma?	3.52		Has a professional appearance?	3.63
Make eye contact with students during the class?	3.19		Make eye contact with students during the class?	3.41
Synchronicity			**Synchronicity**	
Schedules course work in ways which encourages students to stay up-to-date in their work?	4.62		Provides access to course material via web sites?	4.35
Provides access to course material via web sites?	4.62		Schedules course work in ways which encourages students to stay up-to-date in their work?	4.27
Gives rapid feedback on test/assignment?	4.59		Gives rapid feedback on test/assignment?	4.27
Stimulates students to intellectual effort beyond that required by most courses?	4.45		Stimulates students to intellectual effort beyond that required by most courses?	4.15
Seeks feedback from students on the course web site content?	4.41		Seeks feedback from students on the course web site content?	4.09
Provides students access to frequently asked questions?	3.94		Provides students access to frequently asked questions?	3.84
Requests students to report on their progress in the class weekly?	3.29		Requests students to report on their progress in the class weekly?	3.21
location			**location**	
Is approachable in and out of class?	4.67		Is approachable in and out of class?	4.2
Is available outside class?	4.45		Encourages student/faculty interaction outside of class time? (office visits, emails, chat rooms)	3.98
Encourages student/faculty interaction outside of class time? (office visits, emails, chat rooms)	4.23		Is available outside class?	3.77

Figure 5. Items rank order for online mode across country.

component was requesting students to report on their progress in the class weekly. Regarding the co-location component, the most important trait was being approachable in and out of class.

Theoretical contributions

This paper makes theoretical contributions by examining the impact of three factors namely (culture, instruction delivery mode, and demographic factors) on the effective professor characteristics using the media naturalness theory. Despite the cultural differences between the two studied countries, there was partially impact of this factor on faculty perception of the effective professor characteristics related to only two components of the media naturalness theory (speech and co-location) for the face-to-face mode and (synchronicity and co-location) for the online mode. The Hofstede Framework posits that individuals hailing from societies characterized by low power distance, individualism, and weak uncertainty avoidance are more adept at engaging in online learning as opposed to face-to-face learning. Individuals who exhibit high levels of power distance, collectivism, and strong uncertainty avoidance in face-to-face learning environments tend to display greater adaptability compared to their counterparts in online learning settings. Nevertheless, rapid advancements in technology have revolutionized various aspects of society, from the way we engage in cultural exchange. Social media platforms have emerged as powerful tools on a global scale. The impact of technology and social media on culture is undeniable, shaping the way we perceive the world. As such, this study contributes to the literature related to the impact of the culture dimensions by shifting the focus from national culture into espoused culture at individual level. The second contribution is related to the impact of the instruction delivery mode on effective professor characteristics. The results draw researchers' attention to the fact that each component of the media naturalness theory has different level of importance depending on the instruction delivery mode. The third contribution, which also opens an avenue for researchers to explore, is the impact of the demographic factors on the effective professor's characteristics, which continues to be an ongoing debate among researchers (Banks, 2017; Daud & Kassim, 2011; Tran & Do, 2022).

Practical contributions

This study makes several important practical contributions. In particular, we identified several contributing themes from the results that can guide professors in pedagogy and educational administrators for hiring, training, and evaluating professors. The first theme is the agreement of both groups on the top five most important characteristics for effective professors for face-to-face and online modes despite their different cultural backgrounds. These characteristics represent different dimensions of professors' quality, such as personal character (being respectful to students and courteous) and class management and communication skills (making class expectations clear and good verbal communication). Regardless of the teaching mode, the human interaction factor has been the cornerstone of the educational system's relationship between the professor and the students (Zamani et al., 2020). It seems that professors in both countries recognize the importance of the concept of "reach before you teach" by emphasizing the human aspect in the learning and teaching process (Prentis et al., 2013). Therefore, this theme suggests that educational administrators need to provide training programs to enhance such skills.

The second emerging theme was the differences in professors' ratings for the characteristics related to the body language and facial expression component. While the emphasis by both groups was on how to highlight the importance of the subject matter and transfer the knowledge by employing body language and facial expression techniques, qualities related to making direct contact with students such as making eye contact, having charisma and professional appearance had a lower rating in the case of online mode. Hence, this theme suggests that educational institutions should focus on hiring professors who are great communicators and knowledgeable in their subject area (Phillips et al., 2017). Another theme related to the synchronicity component is the importance of being responsive to students' needs. Professors in both countries agreed on the importance of providing students with timely feedback and scheduling course activities in a way that helps students in following the course materials. Thus, this theme recommends that educational institutions encourage faculty to prioritize timely feedback and access to materials so students can have the resources they need to succeed.

Concerning the impact of demographic factors on professors' perception, female professors, compared to male professors, had higher ratings for the importance of the characteristics regardless of the instruction delivery mode; a similar finding was reported by Martin et al (2019). For the discipline factor, there were a few significant differences among professors' disciplines in the case of the face-to-face mode. However, there were more significant differences in the case of the online mode. Likewise, for the teaching

styles factor, there were more significant differences in rating the characteristics in the online mode compared to the face-to-face mode. These findings were in the same line of prior research results in which some factors were significant and others were not (Kinney and Smith (1992; Martin et al. 2019; Tran & Do 2022). Therefore, by exploring effective professor characteristics categorized into five components of the media naturalness theory that differ based on the mode of delivery (online vs. face-to-face), culture, and demographic factors, educational institutions can devise interventions to strengthen the educational outcomes of students.

Study limitations and future research

The limitations of this study, which include the relatively small sample, and self-reported information, should be noted. We employed Harman's single factor method for the common method variance. The threshold value is 50% (Podsakoff et al., 2003). The result indicated that about 22% of the variance is accounted for by one factor of less than 50%. Therefore, the common method variance is not a concern in this study. Another limitation of this study is that it considered online mode as one environment; a potential future research endeavor could include different online teaching modes. As the result of the impact of the demographics on effective professor characteristics is mixed, this should stimulate researchers to investigate this matter with a different methodological approach (e.g. employing an experiment study). Additionally, the impact of professor's cultural background also could be approached in a more comprehensive way by including more countries that represent distinct scores on Hofstede culture dimensions scale.

Conclusion

The main objectives of this study unfold into identifying the rating of importance of effective professor characteristics from professor's perspective, examining the impact of cultural factor and instruction delivery mode on the effective professor characteristics. Additionally, the study examines the impact of demographic factors on professor's ratings. The results showed that these factors have an impact on the perception of professor's rating of effective professor characteristics. There were some differences between professors' perception in the USA and Qatar in the extent of their agreement with the importance of some characteristics. The medium of delivery (face-to-face and online instruction) did appear to reflect some differences in professors' perception of effective professor characteristics. Knowing professors' perceptions toward effective professor characteristics certainly will become even more critical due to the rapid changes in the teaching/learning environment, which includes the advancements in technology (e.g. AI), new instructional delivery methods, and customized/personalized education.

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Appendix: List of items

	USA		Qatar	
	Mean		Mean	
Characteristics related to speech component	F-2-F	Online	F-2-F	Online
Is courteous?	4.83	4.81	4.68	4.48
Is respectful of students?	4.90	4.83	4.83	4.70
Has a sense of humor?	4.12	3.93	3.87	3.79
Has good verbal communication?	4.82	4.60	4.70	4.59
Makes class expectation clear?	4.87	4.91	4.71	4.66
Uses students' names?	4.01	3.72	4.09	3.92
Is able to command the class's attention without shouting?	4.69	4.00	4.68	4.37
Communicates class rules?	4.65	4.59	4.44	4.25
Explain course material clearly and concisely?	4.81	4.77	4.82	4.70
Inspire students to set and achieve goals which really challenged them?	4.49	4.44	4.45	4.30
Characteristics related to body language and facial expression component				
Is enthusiastic in class?	4.79	4.55	4.68	4.43
Uses good examples for content application?	4.72	4.70	4.66	4.57
Is concerned about students?	4.78	4.75	4.54	4.41
Make eye contact with students during the class?	4.66	3.19	4.55	3.41
Has a professional appearance?	4.24	3.64	4.28	3.63
Has charisma?	3.86	3.52	4.07	3.90
Demonstrates the importance and significance of the subject matter?	4.81	4.76	4.65	4.52
Characteristics related to synchronicity component				
Gives rapid feedback on test/assignment?	4.54	4.59	4.35	4.27
Stimulates students to intellectual effort beyond that required by most courses?	4.53	4.45	4.32	4.15
Provides access to course material via web sites?	4.24	4.62	4.16	4.35
Seeks feedback from students on the course web site content?	4.13	4.41	3.97	4.09
Schedules course work in ways which encourages students to stay up-to-date in their work?	4.56	4.62	4.43	4.27
Provides students access to frequently asked questions?	3.78	3.94	3.84	3.84
Requests students to report on their progress in the class weekly?	3.06	3.29	3.13	3.21
Characteristics related to co-location component				
Is approachable in and out of class?	4.81	4.67	4.52	4.20
Is available outside class?	4.45	4.45	3.93	3.77
Encourages student/faculty interaction outside of class time? (office visits, emails, chat rooms)	4.24	4.23	4.05	3.98