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Asia Pacific Journal of Information Systems
Vol. 32 No. 3 (September 2022), 656-683

ISSN 2288-5404 (Print) / ISSN 2288-6818 (Online)
https://doi.org/10.14329/apjis.2022.32.3.656

The Correspondence of Culture and E-Learning Perception Among Indian and Croatian Students During the COVID-19 Pandemic

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ABSTRACT

The COVID-19 pandemic has profoundly affected the world, inflicting nationwide lockdowns interrupting conventional schooling through schools, colleges and universities. Educational institutions are struggling to maintain learning continuity through remote learning solutions. Still, the students' perception of this 'new normal' mode and pace of learning needs to be examined to ensure the success of these efforts. This study aimed at examining the perception of higher education students in India and Croatia especially with respect to the association between cultural orientation and the e-learning. The period considered for the data collection was from March 2020 to September 2020. Correspondence analysis was attempted to create spatial maps to depict the respondent choices. Students from both the regions agreed to the high-power distance that existed in their cultures and considered the role of device and content to be an important dimension of e-learning for it to be effective, but the results also pointed out some differences in their choices on other culture dimensions as well as factors affecting e-learning which make this study unique and suggest in-depth future research for conclusive results.

Keywords: Higher Education, Crisis, Culture, E-Learning, Correspondence Analysis

Ⅰ. Introduction

The universal eruption of the COVID-19 pandemic has turned our whole world upside-down. However, the only actual stronghold is uncertainty, currently covering all aspects of our social lives, enabling the "Risk society" (Beck, 1992) to live up to its full potential.

Despite the same types and aspects of contemporary threats global society faces due to the pandemic crisis, cross-culturally, we witness different approaches and responses national societies practice

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to deal with newly emerged global challenges. In facing a new and unknown future, national societies tend to react under an overall cultural frame already embedded in their community. Traumatic events and uncertain future, and any other social fact do not exist in a social vacuum. Like other social phenomena, these events may be understood within the social and cultural context in which they occur (Young, 1997). Hofstede (1994) defined culture as the shared doctrines among members of one group which distinguished them from others. Culture influences individual perception of technology, and the culture considers the role of peoples' cultural values to ensure the acceptance of new technologies (Masimba et al., 2020).

Having this social fact in mind, we find a specific purpose and aim of this paper in our effort towards comparative research on the influence of cultural preferences regarding e-learning choices among higher education students across India and Croatia in the COVID-19 pandemic crisis.

Ⅱ. Literature Review

The overall crisis frame has been molded and heavily underlined by the still unstoppable and growing COVID-19 presence. Therefore, we are to present the relevant literature background regarding the main research aspects/highlights: Factors affecting e-learning perception, research on cultural preferences grounded in Hofstede's model underlined/submerged by/in COVID-19 pandemic crisis omnipresence. The second half of the literature review also examines the theoretical frameworks relevant to the study.

In regards to the complexity and multi-dimensionality of the research topic, we draw on the literature review by probing into two key research questions. Firstly, although the e-learning courses were prevalent prior to Covid19, the pandemic just accentuated its use, was there a change in e-learning perception and experience among students in India and Croatia, and secondly, did cultural orientation and the student e-learning perception vary among the students of the two countries.

2.1. The COVID-19 Pandemic promulgated Use of E-Learning

Crisis, as Rosenthal et al. (1997) defined, is a threat to the basic norms and values of a society, which demands making decisions under pressure for time and uncertain situations. The pandemic caused by the COVID-19 emergence and sudden world spread shortly followed by the spring 2020 lockdown caused a typical crisis frame to explain the necessity of full e-learning model implementation for the HEIs in both India and Croatia. Liguori and Winkler (2020) noted how the COVID-19 pandemic made universities switch entire face to face education to an online environment.

The frequent debates on the quality of e-learning in higher education compared to face-to-face education were rendered irrelevant during the COVID-19 pandemic. In regards to this aspect, Hodges et al. (2020) noted how well-planned full online university courses need to pass planning, preparation and development time in a period of six to nine months. Due to the crises evolved, emergency remote teaching acted as a life belt for HEIs. Courses that were earlier delivered as face-to-face classroom instruction are now being delivered as blended or hybrid courses.

Zhu and Liu (2020) pointed out that post-COVID-19 time will bring a new level of education that combines face-to-face, blended and online education. They also believe that compulsory teacher education should

take place in a future online environment, but above all, it is necessary to upgrade the curriculum and pedagogy.

Teasar (2020) concludes how COVID-19 has proved that online learning can still change the world of teaching in higher education. First, online learning is necessary and accessible to all, not just individual students, as assumed before the pandemic. Second, international students can be offered a cheaper and higher quality study, provided that teachers improve and update their lessons using online teaching. On the other hand, Faculty are losing a good deal of funding from international students for their capital investments in infrastructure. AL Lily et al. (2020) coined the term 'distanceship' to explain the new social norm introduced by the pandemic that led to the practice of distanced social life. Also, different social and cultural ramifications are recognized in Arab countries observed for the "crisis distant education". Hopes and fears for potential opportunities and rejections, the problem of compatibility with social and cultural norms of the society were a few of them. Radha et al. (2020) in their global perspective of e-learning research in the pandemic lockdown, found out how e-learning had become quite popular among students worldwide. They also confirmed a great interest and increasing use of e-learning for academic use, making this module an unavoidable option in future higher education. Kapasia et al. (2020), in their study of COVID-19 pandemic influence on students' lives in India, discovered that students were faced with various problems related to mental ill-health and issues relating to device connectivity and home environment during this pandemic. The authors suggested targeted interventions to create a positive space for study among students from the vulnerable sections of society. Das and Rahman (2020), in their study of student acceptance of e-learning in Assam, India, revealed how 2/3 of students are more prone to offline mode of their semester examination and 88 per cent of students wanting to return to offline mode before examinations. The results presented in the survey unambiguously endorsed the weakness in the prevailing e-learning system in Assam, India. Croatian researcher Konecki (2020), while studying students' motivation and success rate regarding distance learning during the COVID-19 pandemic, found that student's motivation to learn had slightly increased and stated that distance learning was something they would like to use in the future teaching activities.

Although the vast literature on the influence of the COVID-19 pandemic on e-learning application in higher education is still limited and in publication, we can notice from the work that social and cultural aspects play an important role in understanding this crisis's influence student orientation.

2.2. Factors influencing E-Learning Perception Among Students

Barclay et al. (2018) found that the key elements crucially influencing students' perception and use in the online learning context, especially with respect to the developing economic conditions, included: empathetic cultural practices, device availability and internet connectivity, users' self-efficacy, ease of use and usefulness. These findings had significant insinuations for both academicians as well as policy-makers while they considered adopting online learning delivery modalities for users. Arbaugh and Duray (2001) claimed that convenience and flexibility were the two most distinguishing features of e-learning content. Due to the convenience and flexibility offered by the e-learning programs, learners may complete the learning at any time, and from anywhere they desire

(Yoo et al., 2012; Zhang et al., 2008).

Apart from resulting in cost savings, e-learning is also an efficient means of delivering standardized learning content across many learners (McDonald, 2000). Mohamad (2021) in a recent study confirmed that more than 81% of the variation in the e-learning acceptance was explained by e-learning usefulness, e-learning ease of use, learning from home during COVID-19 and e-learning effectiveness. The researcher applied by multiple regression analysis for the purpose and further mentioned that these independent predictors had a positive association with e-learning acceptance.

2.3. Cultural Context and Its Influence on Technology Acceptance

The study applied thematic analysis to inspect the socio-cultural aspects of e-learning delivery. The paper addressed the pervasive socio-cultural challenge. Rao (2011), stated the influence of national cultural dimensions of power distance, uncertainty avoidance, in-group collectivism, and future-orientation on e-learning practices and proposed a theoretical e-learning model for identifying the impact of national cultural dimensions on e-learning practices. Luppicini (2021) emphasized the relationship of social and cultural complexity associated with e-learning development.

Linton (1945) defined the culture of a society as a way of life practiced by its members, a compilation of ideologies and habits acquired, shared and transmitted from generation to generation. Kluckhohn (1951) described culture as a scheme for living adopted by the members of a particular society. These two classical and elementary sociological definitions of culture can understand the educational and crisis element in both Indian and Croatian society. Wheeler et al. (2003) stated the importance of e-learning to ease the end users' access to adequate and high impact learning content, made available on-demand on-time across all cultures.

Hofstede (2001) has provided a powerful tool for cultural comparisons in defining culture as the shared doctrines among members of one group which distinguished them from others' and helps understand the difference between national cultures (Oyserman 2002; Hofestede, 2001). The Hofstede's cultural dimensions framework comprised six dimensions that represented independent choices for one state of being over others and helped distinguish different countries. Power distance referred to the degree to which unequal distribution of power was acceptable. Individualism related to the extent of interdependence that a society maintained among its members. Masculinity refers to a society driven by achievement, competition and success. Uncertainty avoidance was the degree of tolerance for ambiguity, and long-term orientation referred to the degree of pragmatic thought while dealing with present situations and indulgence referred to the degree of control people exercised on their desires and impulses.

From the <Table 1> it can be seen, Croatia had a high tolerance for power distance, collectivism and lower masculinity with little tolerance for uncertainty. It was more pragmatic to changes in time and was more indulgent a society when compared to India.

Different studies have investigated the relationship among cultural dimensions and e-learning indicators (Steyn and Cronje, 2006; Zaharris et al., 2001). While some of these finding's state that there are no significant relationships, others say that there are significant correlations for a few cultural features.

Adeoye and Wentling (2007) have stated that e-learning usability measures the user's experience when interacting with a course through a website or e-learning activity, and learnability is defined as

<Table 1> Hofstede's Dimensions of Culture Across India & Croatia

Dimension	Score India	Score Croatia
Power distance	77	73
Individualism	52	33
Masculinity (Achievement Orientation)	56	40
Uncertainty avoidance	40	80
Long term orientation	51	58
Indulgence	26	33

Note: https://www.hofstede-insights.com/country-comparison

the ease of use in acquiring the e-learning content. Individualism and masculinity were associated to usability, while power distance showed no association. Collectivism and low power distance were linked with learnability, while high uncertainty avoidance led to longer learning process. Swierczek and Bechter (2010) have classified different learning cultures as high and low contexts. The high context learning cultures have high collectivism and higher power distance, and they are also more averse to uncertainty and are feminine and low context cultures reflect higher individualism and power distance and are more masculine. This study examines the cultural preferences and the e-learning perceptions among higher education students in Kerala, India and Croatia on a two-dimensional spatial map.

2.4. Theoretical Framework

A precipitous growth in the development of information and communication tools(ICTs) has impacted how various educational institutions' teaching-learning processes are dealt with (Wells, 2008). E-learning has become a critical ingredient for effective teaching and learning. The term e-learning refers to using different types of electronic media and ICT in teaching and learning. Hence, the use of electronic media facilitates the exchanges between instructors and learners. The e-learning environment enables the instructors to deliver educational content and allows learners to choose time, pace, and place of study (Reynolds, 2007). The current study envisages exploring the student perception of e-learning in the cultural context of the two regions, i.e., Croatia and Kerala, India. This comparative analysis of e-learning perception would be using the contingency theory of education and investigating the influence of the cultural context in this regard. Such a comparison is also a novelty in e-learning research.

The contingency theory was a basic organisational theory which explained organisational differentiation and integration based on the business eco-system (Lawrence, 1967) that discouraged managers from searching for universal solutions to organisational problems. The theory was adopted in the field of educational research in the 1960s (Derr, 1972). Inspired by a similar viewpoint Goodnow (1982) developed a theoretical framework for ascertaining the relevance of various educational practices and encourage academicians to adopt the best methodology contingent on the circumstances. This theory could investigate the operational and procedural differences among the educational institutions operating in disparate socio-cultural, economic and technological environments. This paper investigates the influence of the cultural context of

higher educational institutions on the learner perception of e-learning. Hence, the contingency theory of education is the most apt framework to be used for the study. The researchers have used Hofstede's Model of National culture to research the cultural orientation of students in both India and Croatia.

The paper also takes the help of the Bray and Thomas cube to understand the context of the two regions considered in this comparative study. The Bray and Thomas cube is a framework for approaching Comparative Education. The cube includes three dimensions which are: demographics, education within society and location. The geographical axis proposes that research focus on world regions, countries, provinces, schools, classrooms, and individuals. The second axis inspects demographic factors such as age, religion, ethnicity and gender as focal points in the research. Finally, the third axis proposes substantive issues relating to curriculum, teaching methods, political changes and even labour markets (Bray, 1995). The researchers use these three-axis proposed by the framework while comparing different educational contexts in Kerala, India and Croatia.

Ⅲ. Methodology

3.1. Methodological Premises

The realistic and unique social experiment imposed upon higher educational institutions (HEIs) in a COVID-19 spring 2020 lockdown (imposed in Croatia for the period from mid-March until June and in Kerala, India, a complete lockdown prevailed from March until September) allowed us to test the hypotheses set in an obligatory educational mode for both countries. The lockdown period empowered e-learning as the only available way of educational continuity. In these specific circumstances, basic social processes of integration, assimilation, and socialisation of an individual student into an academic community encompassing numerous manifest and latent social functions HEIs are traditionally equipped with have gone through an irreversible transformation.

The paper emphasises the transfer of culture into secondary socialisation through the HEIs e-learning model in the specific cultural, spatial and temporal dimensions. The significance of the study research conducted is in the originality of the experimental social circumstances realistically present, allowing us to avoid the researchers bias caused by the assumption that researchers prone to e-learning research aspect are likely to research the area, as well as the pressure examinees experience, regarding the social experiment settings itself.

3.2. Research Settings Comparing Kerala, India and Croatia

Tavangarian et al. (2004) defined e-learning as various methods of electronically reinforced teaching and learning, which are procedural in character and aim to build knowledge concerning individual experience, practice and knowledge gained by the learner. E-learning, as defined previously, was used in less than 20% of the courses conducted in Croatia before the COVID-19 outbreak. Similar was the case with India. According to a national survey on education, the Indian Education System would have significant challenges going online as only 8% of Indian households with young members owned computers and net links Kundu (2020). Kerala, located in the southwest of India, leads in social development among the other states. With 35.3 million people, the state is home to about 2.76% Indians Demographics of

Kerala (2022). A large majority of the Kerala population belong to the Malayali ethnicity. Kerala is one of the more affluent states in India with high literacy rates when compared to other parts and, according to the IAMAI report (November 2019), had 54% internet availability which is the second largest after Delhi NCR that topped the list of states in internet penetration (Bijulal, 2020). Similar was the case with Croatia, where the literacy rate of 98.1 % has been reported. In 2019, more than 40 % of the population in the age group of 30 – 34 years had completed tertiary education (Eurostat, 2020), while in Kerala, India, the gross enrolment ratio in higher education was 37% (Basheer, 2020). In the Croatian context, the internet access in households is 85%, household availability of computers was reported to be 74% in 2017, and 22% of individuals used mobiles to access the internet in 2019 (Eurostat, 2020). Therefore, considering higher education students from Kerala, India and Croatia as respondents suited the needs of the study.

3.3. Data Collection

The main objective of this study was to determine the association between students' e-learning perception and their cultural orientation through a spatial map and, in turn, assess the differences of these variables across the state of Kerala, India and Croatia. A cross-sectional study using a survey method of data collection was used to collect responses—the survey instrument comprised three sections. The first section had ten questions probing the respondents' demographic information like their age, gender, place of stay, educational qualification, duration of use of e-learning courses and the number of e-learning courses they had attended to date. The second section of the questionnaire contained 22 statements aimed at measuring e-learning perception among students, and a 5-point Likert scale was used, with one meaning "totally disagree" and five meaning "totally agree". The third section of the questionnaire probed into the e-learning experience of the students and their cultural orientation. The questionnaires are circulated as google forms; face-to-face interactions with the students were restricted due to the lockdown imposed by the COVID-19 pandemic. The data was collected from March 2020 – August 2020 from India and Croatia to gauge the student perception of e-learning, particularly during the COVID-19 pandemic. Respondents were assured that the data collected through the survey would be used solely for statistical research purposes and were requested to respond most objectively. A pilot study was initially conducted with a sample size of 30 respondents, each from the state of Kerala in India and Croatia. The respondents in the pilot study were contacted by telephone and briefed about researchers' intentions and objectives before data collection. Several research articles were referred to understand better various factors influencing student perception of e-learning (Bagozzi et al., 1992; Costello, 2013; Neeraj, 2018; Vitoria, 2018). The survey instrument was then adapted to suit the study in the given context. A total of 21 Likert statements were used to assess e-learning perception. After that, Google forms were created and shared with students in higher education institutions chosen as per the researchers' convenience in Kerala, India and Croatia. After analysing the pilot data, the survey instrument was refined by eliminating specific repetitive and misleading questions to the respondents. A total of 120 Google forms were circulated in both these countries, of which 100 correctly filled in responses were received from Indian respondents, and another 106 responses were received from Croatian respondents.

3.4. Data Analysis

A total of 206 responses were collected through online forms and were collated using suitable statistical software. Then, data analysis tools like percentage analysis, factor analysis and correspondence analysis were applied to subsequent parts of the survey data.

A factor analysis was attempted on the 21 statements used to measure the e-learning perception of students. The KMO and Bartlett's test revealed sampling adequacy of .80, and five factors explained as much as 60% of the total variance in the data. These five factors were e-learning utility, user-friendliness, device & content, compatibility, and learning experience. The cultural orientation of students was ascertained using five culture dimensions drawn from Hofstede's model (Hofstede, 2001.). The dimensions of culture used for comparison were collectivism, power distance, uncertainty avoidance, nurturing and long-term orientation. The primary analysis tool that was used for the paper was correspondence analysis. Correspondence analysis aims at describing the relationships between two nominal variables through a correspondence table in a two-dimensional space while concurrently describing the relationships between the categories for each variable. The two nominal variables considered here were e-learning perception and cultural orientation. For each variable, the distances between category points in a plot reflect the relationships between the categories with similar categories plotted close to each other. Projecting points for one variable on the vector from the origin to a category point for the other variable describes the relationship between the variables.

Ⅳ. Findings and Results

A total of 100 correctly filled-in responses were collected from students in India, and 106 completed responses were received from the Croatian students. In the case of the Indian respondents, 52% were males, and 48% were females; likewise, 37% of the respondents from Croatia were males while 63% were males. <Table 2> depicts the demographic details of the respondents. The majority of the respondents from both countries belonged to the age group of 20-23 years. Forty-five per cent of the respondents from Croatia belonged to the urban population, and another 37% were from semi-urban regions. In contrast, in the case of the Indian respondents, 38% of them were from the urban regions, and another 38% were from semi-urban regions, while the remaining of the respondents were from rural regions.

<Table 2>

Gender of Respondents				
Gender	India	Percentage	Croatia	Percentage
Male	52	52	39	37
Female	48	48	67	63
Total	100	100	106	100
Age of Respondents				
Age in years	India	Percentage	Croatia	Percentage
20-23	66	66	82	77
Above 23	34	34	24	23
Total	100	100	106	100
Region of Stay				
Region	India	Percentage	Croatia	Percentage
Urban	38	38	48	45.3
Semi-Urban	38	38	39	36.8
Rural	24	24	19	17.9
Total	100	100.0	106	100.0

Note: Primary data

<Table 3> Change in E-Learning Perception Due to Lockdown

Change in Perception	India	Percent	Croatia	Percent
Yes	92	92	88	84
No	8	8	18	16
Total	88	100	106	100

Note: Primary data

A majority of the respondents said that the COVID-19 pandemic inflicted lockdown had changed their perception towards e-learning, as depicted in <Table 3>.

a) E-Learning Experience: E-Learning experience among the students was probed using three dimensions viz., sequencing referring to students being able to relate with successive content and go more deeply and broadly into the subject; continuity referring to students being able to connect with particular elements in the subject and integration referring to students being able to gain a unified view across several subjects. <Table 4> depicts student responses in the two countries. The majority of the students from both groups rated the sequencing and continuity of e-learning content as satisfactory, while students from Croatia rated the integration of e-learning content as good.

b) Comparative Analysis of Student Perceptions Using Correspondence Analysis: Two variables used for analysis were the students' e-learning perception and cultural orientation. The various dimensions of e-learning perception extracted after factor analysis were e-learning utility, the role of device and content, compatibility, user-friendliness, learning experience. The cultural dimensions considered were collectivism, power distance, long term orientation, uncertainty avoidance and nurturing. The table of association so formed in correspondence analysis is called the correspondence table.

<Table 5> depicts how a student from India have associated e-learning dimensions and culture. According to <Table 5>, the role of the device and content is the most crucial factor influencing e-learning perception, followed by compatibility. While the most popular and relatable culture dimension is high power distance followed by collectivism.

From the <Table 6>, it can be inferred that students in India associated each dimension of culture viz., collectivism, power distance, uncertainty avoidance,

<Table 4> E-Learning Experience

	India			Croatia		
Learning Experience	Sequence	Continuity	Integration	Sequence	Continuity	Integration
	Percent	Percent	Percent	Percent	Percent	Percent
very poor	11.4	11.4	9.1	7.5	8.5	10.4
Poor	22.7	21.6	26.1	25.5	14.2	16.0
Satisfactory	37.5	31.8	28.4	27.4	32.1	22.6
Good	17.0	23.9	21.6	26.4	23.6	33.0
Excellent	11.4	11.4	14.8	13.2	21.7	17.9
Totals	100.0	100.0	100.0	100.0	100.0	100.0

Note: Primary data

<Table 5> Correspondence Table for India

Culture Variables	E-Learning Perception					
	E Learning Utility	Role of Device & Content	Compatibility	User Friendliness	Learning Experience	Active Margin
Collectivism	33	65	60	56	35	249
Power Distance	33	69	63	58	32	255
Uncertainty Avoidance	30	68	59	55	34	246
Nurturing	24	54	50	47	25	200
Long Term Orientation	26	55	50	48	20	199
Active Margin	146	311	282	264	146	1149

Note: Primary data

<Table 6> Row Profiles – India

Culture Variables	E-Learning Perception					
	E Learning Utility	Role of Device & Content	Compatibility	User Friendliness	Learning Experience	Active Margin
Collectivism	.133	.261	.241	.225	.141	1.000
Power Distance	.129	.271	.247	.227	.125	1.000
Uncertainty Avoidance	.122	.276	.240	.224	.138	1.000
Nurturing	.120	.270	.250	.235	.125	1.000
Long Term Orientation	.131	.276	.251	.241	.101	1.000
Mass	.127	.271	.245	.230	.127	

Note: Primary data

nurturing and long-term orientation mainly with the role of device and content more than any other e-learning attribute. The only other attribute that was close to the part of the device and content was user-friendliness. The most highly rated e-learning attributes were the role of device & content and compatibility.

From the column profile <Table 7>, it can be inferred that students have identified the culture dimensions collectivism and power distance as the two dominant culture dimensions.

In the table summary <Table 8>, the rows represent the calculated latent variables, and the columns represent various statistics and quantities associated with those latent variables. The vital aspect to look at this stage is the cumulative column under the proportion of inertia. This detail gives the proportion of the accounted for variability (inertia) attributed by that latent variable, so the first latent variable accounts for 84.6% of the total variability. The first two latent variables between them account for 96.0% of the total variability and so on. Here 99.5% of

<Table 7> Column Profiles – India

Culture Variables	E-Learning Perception					
	E Learning Utility	Role of Device & Content	Compatibility	User Friendliness	Learning Experience	Mass
Collectivism	.226	.209	.213	.212	.240	.217
Power Distance	.226	.222	.223	.220	.219	.222
Uncertainty Avoidance	.205	.219	.209	.208	.233	.214
Nurturing	.164	.174	.177	.178	.171	.174
Long Term Orientation	.178	.177	.177	.182	.137	.173
Active Margin	1.000	1.000	1.000	1.000	1.000	

Note: Primary data

<Table 8> Summary – India

Dimension	Singular Value	Inertia	Chi-Square	Sig.	Proportion of Inertia		Confidence Singular Value	
					Accounted for	Cumulative	Standard Deviation	Correlation 2
1	.042	.002			.846	.846	.028	-.004
2	.015	.000			.114	.960	.029	
3	.009	.000			.035	.995		
4	.003	.000			.005	1.000		
Total		.002	2.381	.000	1.000	1.000		

Note: Primary data

the total variability is accounted for by the first three latent variables, and as a matter of judgement, about 99% of the explained variability should be more than sufficient to act as a proxy for all the variability explained by the solution. So, we shall limit the number of these latent variables to three, as that is all we need. Finally, to look at the correlation matrix. Essentially it is better not to have latent variables which are too highly correlated as these latent variables are supposed to be orthogonal (uncorrelated). We have a single value for correlation of 0.004, which is too low a correlation.

<Table 9> shows that long-term orientation contributes most to dimension one, while collectivism contributes most to dimension two. The culture dimension power distance lies very close to the origin, so it cannot be classified into any dimension. In this <Table 9>, the mass column refers to the proportion of the category in the sample and is taken as a measure of the importance of that category amongst the whole sample.

The more interesting columns are those labelled one and two. The values in these cells are the coordinates of the category on the respective latent variable. So, the category collectivism has a score of 0.202 on dimension one and 0.171 on dimension 2.

<Table 9> Overview Row Points - India

Culture Variables	Mass	Score in Dimension		Inertia	Contribution				
		1	2		Of Point to Inertia of Dimension		Of Dimension to Inertia of Point		
					1	2	1	2	Total
Collectivism	.217	.203	.171	.000	.213	.413	.786	.204	.990
Power Distance	.222	-.017	.050	.000	.002	.036	.129	.390	.519
uncertainty Avoidance	.214	.167	-.149	.000	.142	.309	.727	.213	.940
Nurturing	.174	-.046	-.139	.000	.009	.219	.139	.468	.607
Long Term Orientation	.173	-.392	.046	.001	.634	.024	.991	.005	.996
Active Total	1.000			.002	1.000	1.000			
a. Symmetrical normalization									

Note: Primary data

<Table 10> Overview Column Points - India

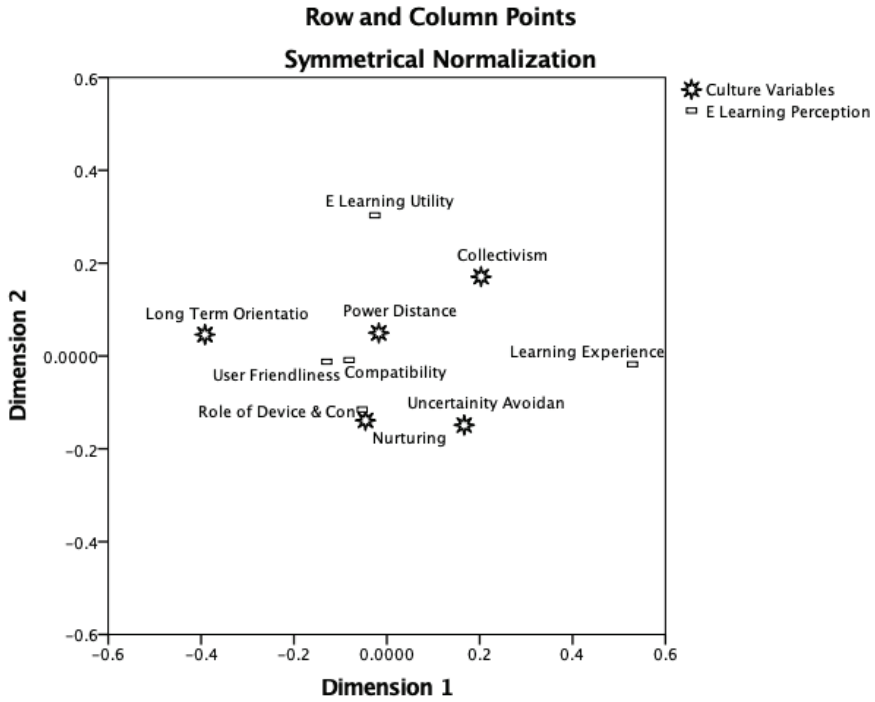
E-Learning Perception	Mass	Score in Dimension		Inertia	Contribution				
		1	2		Of Point to Inertia of Dimension		Of Dimension to Inertia of Point		
					1	2	1	2	Total
E Learning Utility	.127	-.026	.303	.000	.002	.759	.019	.939	.958
Role of Device & Content	.271	-.053	-.115	.000	.018	.234	.261	.455	.716
Compatibility	.245	-.081	-.009	.000	.039	.001	.786	.003	.790
User Friendliness	.230	-.129	-.012	.000	.092	.002	.881	.003	.884
Learning Experience	.127	.529	-.018	.001	.850	.003	.999	.000	.999
Active Total	1.000			.002	1.000	1.000			
a. Symmetrical normalization									

Note: Primary data

If we look down the dimension one column, we see that the scores in the dimensions have positive magnitudes. This result suggests that the position of the first latent variable, or dimension, is in the positive segment in the map. However, all other cultural variables have at least one negative dimension, and hence the position will change accordingly in the spatial map.

The inertia column indicates the relative effect that category is having upon the solution as a whole. Here the inertia is relatively small, and no particular category is dominating the solution.

From the <Table 10>, it can be inferred that e-learning experience contributes the most to di-



<Figure 1> Spatial Map for India

mension one while e-learning utility contributes most to dimension two. Compatibility and user-friendliness lie close to the origin and cannot be classified into a particular dimension. The first one is the e-learning utility, having both negative and positives values in the dimensions. The remaining e-learning perceptions do have negative values on both the dimensions except e-learning experience and hence their positions also will be marked accordingly in the spatial map. Again, from the inertia column, no particular category of e-learning utility seems to dominate the solution.

Here is a biplot of the coordinates in, in this case, dimension one and dimension two, for both cultural variables and e-learning perception.

Because both variables are representative of latent variables, any proximity between categories of either variable on the biplot is interpretable as more substantive proximity. For instance, on the biplot of dimensions one and two, we can see that the role of device and content is closely associated with the culture dimension nurturing while no other dimension of culture seemed to be closely associated with any attribute of e-learning. However, it can be seen that e-learning attributes' user-friendliness' and 'compatibility' were closely associated with each other.

From the <Table 11>, most dimensions of culture, viz., collectivism, power distance, nurturing, power distance, and uncertainty avoidance, were most closely associated with the role of device and content. Long-term orientation was associated with user-friendliness. And user-friendliness was the most highly rated attribute of e-learning.

In <Table 12>, the row profiles reveal that collectivism was most closely associated with the role of

<Table 11> Correspondence Table – Croatia

Culture Variables	E-Learning Perception					
	E Learning Utility	Role of Device & Content	Compatibility	User Friendliness	Learning Experience	Active Margin
Collectivism	31	52	45	47	29	204
Power Distance	34	54	46	48	35	217
Uncertainty Avoidance	43	52	44	48	31	218
Nurturing	25	40	36	34	20	155
Long Term Orientation	25	33	29	55	20	162
Active Margin	158	231	200	232	135	956

Note: Primary data

<Table 12> Row Profiles – Croatia

Culture Variables	E-Learning Perception					
	E Learning Utility	Role of Device & Content	Compatibility	User Friendliness	Learning Experience	Active Margin
Collectivism	.152	.255	.221	.230	.142	1.000
Power Distance	.157	.249	.212	.221	.161	1.000
Uncertainty Avoidance	.197	.239	.202	.220	.142	1.000
Nurturing	.161	.258	.232	.219	.129	1.000
Long Term Orientation	.154	.204	.179	.340	.123	1.000
Mass	.165	.242	.209	.243	.141	

Note: Primary data

device and content and user-friendliness attributes of e-learning. Power distance, uncertainty avoidance, and nurturing dimensions of culture were also related to the role of the device and content. At the same time, long term orientation was most closely associated with user-friendliness, and User-friendliness was the most rated attribute of e-learning.

The <Table 13> shows the column profile of the responses. The culture dimension uncertainty avoidance was the most rated dimension, followed by power distance. Uncertainty avoidance is most closely associated with e-learning utility, and power distance has been most closely associated with e-learning experience.

In the summary <Table 14>, the rows represent the calculated latent variables, and the columns represent various statistics and quantities associated with those latent variables. The important aspect to look at this stage is the cumulative column under the proportion of inertia. This gives the proportion of the accounted for variability (inertia) by that latent variable, so the first latent variable accounts for 77.3%

<Table 13> Column Profiles – Croatia

Culture Variables	E-Learning Perception					
	E Learning Utility	Role of Device & Content	Compatibility	User Friendliness	Learning Experience	Mass
Collectivism	.196	.225	.225	.203	.215	.213
Power Distance	.215	.234	.230	.207	.259	.227
Uncertainty Avoidance	.272	.225	.220	.207	.230	.228
Nurturing	.158	.173	.180	.147	.148	.162
Long Term Orientation	.158	.143	.145	.237	.148	.169
Active Margin	1.000	1.000	1.000	1.000	1.000	

Note: Primary data

<Table 14> Summary – Croatia

Dimension	Singular Value	Inertia	Chi-Square	Sig.	Proportion of Inertia		Confidence Singular Value	
					Accounted for	Cumulative	Standard Deviation	Correlation 2
1	.103	.011			.773	.773	.035	.008
2	.047	.002			.158	.931	.034	
3	.031	.001			.068	1.000		
4	.003	.000			.000	1.000		
Total		.014	13.176	.000	1.000	1.000		

Note: Primary data

of the total variability. The first two latent variables between them account for 93.1% of the total variability and so on. Here 93% of the total variability is accounted for by the first two latent variables, and as a matter of judgement, about 93% of the explained variability should be sufficient to act as a proxy for all the variability explained by the solution. So, the number of these latent variables are limited to two, as that is all we need. Finally, to look at the correlation matrix. Essentially it is better not to have latent variables which are too highly correlated as these latent variables are supposed to be orthogonal (uncorrelated). We have a single value for correlation of 0.008, which is too low a correlation.

<Table 15> depicts the uncertainty avoidance dimension of culture makes the maximum contribution to dimension two, whereas long term orientation is the dimension that contributes most to dimension1. In this table, the mass column refers to the proportion of the category in the sample and is taken as a measure of the importance of that category amongst the whole sample. The more interesting columns are those labelled one and two. The values in these cells are the coordinates of the category on the respective latent variable. So, the category collectivism has a score of 0.108 on dimension one and 0.196 on di-

<Table 15> Overview Row Points - Croatia

Culture Variables	Mass	Score in Dimension		Inertia	Contribution				
		1	2		Of Point to Inertia of Dimension		Of Dimension to Inertia of Point		
					1	2	1	2	Total
Collectivism	.213	.108	.196	.001	.024	.175	.398	.585	.982
Power Distance	.227	.165	.099	.001	.060	.048	.515	.084	.599
Uncertainty Avoidance	.228	.130	-.382	.002	.038	.715	.204	.794	.998
Nurturing	.162	.184	.134	.001	.053	.062	.497	.119	.616
Long Term Orientation	.169	-.709	.007	.009	.825	.000	1.000	.000	1.000
Active Total	1.000			.014	1.000	1.000			
a. Symmetrical normalization									

Note: Primary data

<Table 16> Overview Column Points – Croatia

E-Learning Perception	Mass	Score in Dimension		Inertia	Contribution				
		1	2		Of Point to Inertia of Dimension		Of Dimension to Inertia of Point		
					1	2	1	2	Total
E Learning Utility	.165	.089	-.472	.002	.013	.789	.072	.913	.985
Role of Device & Content	.242	.222	.115	.001	.115	.069	.874	.106	.981
Compatibility	.209	.207	.169	.001	.087	.127	.683	.205	.889
User Friendliness	.243	-.562	.051	.008	.743	.014	.996	.004	1.000
Learning Experience	.141	.176	.018	.001	.043	.001	.378	.002	.380
Active Total	1.000			.014	1.000	1.000			
a. Symmetrical normalization									

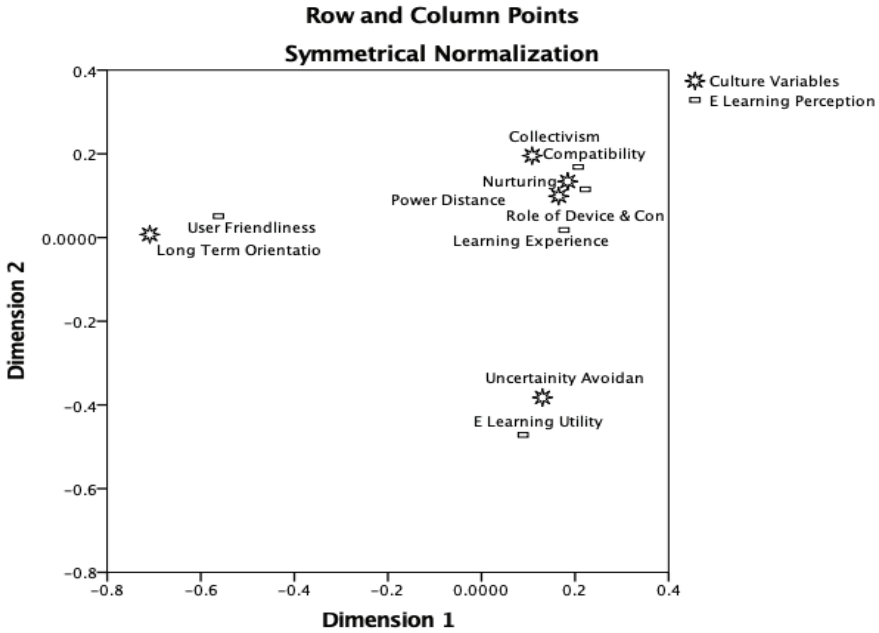
Note: Primary data

mension 2.

If we look down the dimension one the column, we see that the scores in the dimensions have positive magnitudes. This result suggests that the position of the first latent variable, or dimension, is in the positive segment in the map. The position of other cultural variables will change in the spatial map according to their signs in the dimensions.

The inertia column indicates the relative effect that category is having upon the solution as a whole. Here the inertia is relatively small, and no particular category is dominating the solution.

The inertia column indicates the relative effect that category is having upon the solution as a whole.



<Figure 2> Spatial Map for Croatia

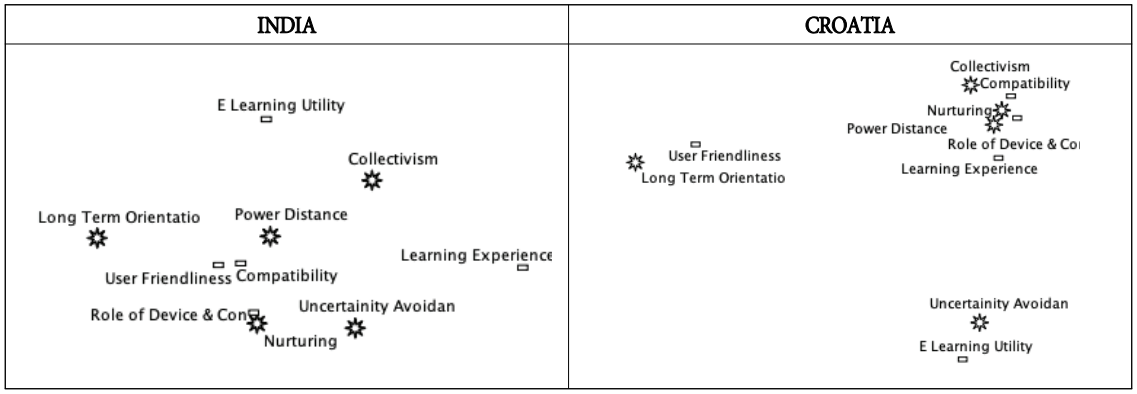
Here the inertia is relatively small, and no particular category is dominating the solution.

From <Table 16>, it can be observed that e-learning attribute user-friendliness contributes most to dimension1 while e-learning utility contributes most to dimension2. The first one is the e-learning utility, having both negative and positives values in the dimensions. The position of other cultural variables will change in the spatial map according to their signs in the dimensions. The inertia column indicates the relative effect that category is having upon the solution as a whole. Here the inertia is relatively small, and no particular category is dominating the solution.

<Figure 2> depicts that culture dimensions collectivism, nurturing and power distance are most closely associated with e-learning attributes compatibility, e-learning experience and role of device & content on the high-high plane along with the two-dimensional map. On the high-low plane of the map, it can be seen that uncertainty avoidance has been associated with e-learning utility. The low – high plane of the map shows the association between user-friendliness and long-term orientation.

Ⅴ. Discussion

In response to the first research question the data indicates that the COVID-19 pandemic has caused a change in the overall students' perception of e-learning. These findings are similar to the findings by Adams (2020), who found that most of the students were now ready for the e-learning mode of learning due to the pandemic. While rating their experience with e-learning, the majority of the students in India have given satisfactory ratings for the sequencing, continuity, and integration of learning concepts. In contrast, in the case of students from Croatia, a good majority of them claimed the e-learning experience



<Figure 3> Summary of Spatial Maps of India and Croatia

as good when it comes to integrating learning in the broader context. Such a finding could be because of the various challenges that students in this part of the world may face regarding poor network connectivity, bandwidth, or even the unsuitable home environment for attending e-learning sessions (Rizvi, 2021).

While tracing the influence of cultural orientation and the students' e-learning perception, it was found that students from both the countries have associated various attributes of e-learning perception with different cultural dimensions.

The findings of the correspondence analysis are summarised in <Figure 3>, revealing specific stark differences in the cultural orientation and perceptions towards e-learning attributes among students in Kerala, India and Croatia. In the case of the Indian students, it is found that they associate power distance and collectivism as dominant in their culture and relate primarily with e-learning attributes compatibility and role of device and content. The collectivist thought is the preference to belong to a larger social framework where individuals are expected to act for the greater good of in-groups they belong to. Another predominant culture dimension was high power distance, where India scores high on this dimension, indicating a high preference for hierarchy and unequal distribution of power in society (Hattangadi, 2019). Though the students felt that compatibility was also closely associated with the user-friendliness of the system, their association of the nurturing dimension of culture with the role of device and content is evident from the map. It is interesting to link these findings to the premise that the country practiced the ancient 'Gurukul System' of education. 'The Gurukul System', which dates back to 5000BC, was based on the emotional bond shared by the student and the teacher. The word Gurukula is derived from the Sanskrit word 'guru' (teacher or master), and 'kula' means extended family (Chandwani, 2019). This unique system of imparting learning was not bound by regulated hours of teaching or payment of fees. The ultimate goal was to impart knowledge to achieve the supreme goal of life, which is self-realisation (Joshi, 2020). Traditionally the Indian society is characterised by collectivism, and high-power distance and teacher-student relationships are still considered nurturing. In the face-to-face learning environment, the bond between the teacher and learner is easy to develop and is valued as needed for holistic learning. While attending e-learning sessions, students could encounter feelings of seclusion and dis-

suasion due to the lack of these face-to-face interactions coupled with excessive screen time (Rizvi, 2021). Although e-learning allows for a self-paced, student-centric model of learning, it may be less effective when compared to face-to-face teaching as it lacks interactivity and is devoid of bonding between the teacher and the students.

On the other hand, the Croatian respondents have related uncertainty- avoidance and power distance as the dominant attributes of culture and user-friendliness as the most rated attribute of e-learning. It was observed that a clear association of almost all the dimensions of culture existed with e-learning attributes of compatibility, e-learning experience and role of device and content. Uncertainty avoidance was associated with e-learning utility and long-term orientation with user-friendliness. Previous studies reveal that Croatia scores high on uncertainty avoidance (Rajh, 2015), implying intolerance for uncertainties and a high need for rules and structure, which is why the students have associated more with e-learning attributes like compatibility, user-friendliness and utility. The results can, in general, be indicative of specific skills that the students may need to continue to reap the benefits of e-learning. These skills could include informed decision-making, creative problem solving and adaptability, irrespective of the cultural context. Nevertheless, the cultural context does play a vital role in moulding the perception of the student communities.

Ⅵ. Conclusion and Recommendation

The study found that most students from both groups rated the sequencing and continuity of e-learning content as satisfactory, while students from Croatia rated integration of e-learning content as good. The results of the study emphasised the influence of culture on e-learning. The students in the Indian context are different from their Croatian counterparts in perceiving culture and associating it with various e-learning attributes. For e-learning to be effective, it is pertinent to be adapted to the context. The Indian students who relate mainly with high power distance and value nurturing may learn more effectively in a teacher-led environment.

In contrast, the Croatian student community has high uncertainty avoidance and is strongly associated with e-learning utility and user-friendliness. Therefore, it may be concluded that cultural orientation may impact e-learning. E-learning courses may be adapted according to the cultural context of the learners to make them more effective. In high context cultures where nurturing relationships are valued, the teacher may have to spend more time giving guidance and support to the students. Students may learn better when subjected to interactive assignments, which may require working in groups. On the contrary, in the case of low context cultures, the teacher may have the freedom to be more creative and collaborative than being directive. The learning approaches may be designed to be cooperative and interactive.

With policymakers across the globe aiming at a more inclusive development in all sectors, it is noteworthy to mention 'Unnath Bharat Abhiyan', (meaning progressive India campaign). The scheme introduced by the Ministry of Human Resource Development (MHRD) in 2014, aimed at bringing about transformational changes across the nation by leveraging knowledge institutions and building an architecture of sustainable development in India. Later, Unnat Bharat Abhiyan 2.0 was unveiled on April 25, 2018. Similarly, the European union key

strategic goals in a New Cohesion Policy (2021-2027) confirm smarter, greener, more connected, social and closer to citizens society, where digitalisation in all aspects of social lives is an inevitable fact. As Tesar (2020) noted Covid-19 pandemic was a mere accelerator of the processes that were put into motion some time ago, rather than a radical societal change maker. The pandemic crisis created new opportunities and reinforced that societies needed holistic, flexible and resilient higher educational systems that were responsive to the needs of the changing times. Educational processes (as a part of cultural socialisation) cannot be entirely detached from face-to-face interaction, as through social interaction, we become conscious community members. Therefore, flexible hybrid models would fit utmost regarding the current societal needs, enabling communities to cut down on mobility and rental cost for students, enabling the development of smaller urban and rural areas, contributing altogether towards reduced carbon emissions and ecological footprint. However, before financial and ecological benefits are achieved, vast assessable infrastructure enabling fast, secure and uninterrupted connectivity needs to be established altogether with device affordability and availability.

Ⅶ. Limitations and Future Scope

This study was cross-sectional research conducted in Kerala, India and Croatia from March to September 2020; hence the causal relationships could not be derived directly from the findings. Another shortcoming of the study was that the study's findings were not generalisable as the sample size was small. The study was based on the students' self-reported responses and may be influenced by the forced lockdown due to the COVID-19 pandemic. Hence future studies may focus on replicating a similar study under similar research settings but with a larger sample. Further, the same study may be repeated once the effect of the pandemic is minimised and the educational institutions revert to their traditional mode of operation to verify the generalizability of the findings.

<References>

[1] Adams, D., Chuah, K. M., Sumintono, B., and Mohamed, A. (2021). Students' readiness for e-learning during the COVID-19 pandemic in a South-East Asian university: A Rasch analysis. *Asian Education and Development Studies, 11*(2), 324-339. https://doi.org/10. 1108/AEDS-05-2020-0100

[2] Adeoye, B., and Wentling, R. (2007). The relationship between national culture and the usability of an e-learning system. *International Journal on E-Learning, 6*(1), 119-146. https://doi.org/10.1080/1367886042000338245

[3] Al, A. E., Ismail, A. F., Abunasser, M. F., and Alqahtani, R. H. A. (2020). Distance education as a response to pandemics: Coronavirus and Arab culture. *Technology in Society, 63*(2020), 101-317. https://doi.org/10.1016/j.techsoc. 2020.101317

[4] Arbaugh, J. B., and Duray, R. (2001). Class section size, perceived classroom characteristics, instructor experience, and student learning and satisfaction with web-based courses: A study and comparison of two online MBA programs. In D. Nagao (Ed.), *Academy of management best papers proceedings* (pp. A1-A6) [CD-ROM]. Briarcliff Manor, NY : Academy of Management.

[5] Bagozzi, R. P., Davis, F. D., and Warshaw, P. R. (1992). Development and test of a theory of technological learning and usage. *Human Relations, 45*(7), 660-686.

[6] Barclay, C., Donalds, C., and Osei-Bryson, K. M. (2018). Investigating critical success factors in online learning environments in higher education systems in the Caribbean*. Information Technology for Development, 24(3), 582611. https://doi.org/10.1080/0268 1102.2018.1476831

[7] Basheer, M. (2020). Kerala way behind Tamil Nadu in higher education enrolment, Retrieved from https://english.mathrubhumi.com/education/news/news-updates/kerala-way-behind-tamil-nadu-in-higher-education-enrolment-1

[8] Beck, U. (1992). *Risk Society: Towards a New Modernity*. London: SAGE.

[9] Bray, M., and Thomas, R. M. (1995). Levels of comparison in educational studies: Different insights from different literatures and the value of multilevel analyses. *Harvard Education Review, 65*(3), 472-490. https://doi.org/10.17763/haer.65.3.g3228437224v4877

[10] Chandwani, N. (2019, March 8). The importance of the Gurukul system and why Indian education needs it, Retrieved from https://www.k12academics.com/Education%20Worldwide/Education%20in%20India/gurukula-schools-india

[11] Costello, R. (2013). Evaluating E-Learning from an End User Perspective, Retrieved from https://www.researchgate.net/publication/263245212_Evaluating_E_Learning_from_an_End_User_Perspective

[12] Das, R., and Rahman, A. (2020). Acceptance of E-learning by undergraduate students during the Covid-19 pandemic: A pilot study from Assam, India. *JCR, 7*(13), 4460-4464. Retrieved from http://www.jcreview.com/fulltext/197-1602474132.pdf?1603926069

[13] Demographics of Kerala. (2022). In *Wikipedia*. https://en.wikipedia.org/wiki/Demographics_of_Kerala

[14] Derr, C. B., and Gabarro, J. J. (1972). An organisational contingency theory for education, *Educational Administration Quarterly, 8*(2), 26-43. http://doi.org/10. 1177/0013161X7200800203

[15] Goodnow, W. E. (1982). The contingency theory of education. *International Journal of Lifelong Education, 1*(4), 341-352. http://doi.org/10.1080/0260137820010404

[16] Hattangadi, V. (2019, March). Six dimensions to understand cultural differences in the world., Retrieved from https://www.financialexpress.com/opinion/six-dimensions-to-understand-cultural-differences-in-the-world/1526102/

[17] Hodges, C. B., Moore, S., Lockee, B. B., Trust, T., and Bond, M. A. (2020). The difference between emergency remote teaching and online learning, Retrieved from https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning

[18] Hofstede, G. (2001). *Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations Across Nations*. Sage publications.

[19] Joshi, D. (2020, February). Gurukul and modern education system in india: holistic outlook. Retrieved from https://www.researchgate.net/publication/339253014_gurukul_and_modern_education_system_in_india_holistic_outlook

[20] Kapasiaa, N., Paulb, P., Roy, A., Saha, J., Zaveri, A., Mallick, R., Barman, B., Das, P., and Chouhan, P. (2020). Impact of lockdown on learning status of undergraduate and postgraduate students during COVID-19 pandemic in West Bengal, India. *Children and Youth Services Review, 116*. 105-194. Retrieved from https://reader.elsevier.com/reader/sd/pii/S0190740920310604DE97B89

[21] Kluckhohn, C. K. (1951). Values and value orientations in the theory of action. In T. Parsons, and E. A. Shils (Eds.), *Toward a general theory of action*. Cambridge, Harvard University Press.

[22] Konecki, M. (2020). Impact of Distance Learning on Motivation and Success Rate of Students During the COVID-19 Pandemic, Retrieved from http://docs.mipro-proceedings.com/ce/50_CE_6190.pdf

[23] Kundu P. (2020). Indian education can't go online

– only 8% of homes with young members have computer with net link. Retrieved From https://www.cbgaindia.org/blog/indian-education-cant-go-online-8-homes-young-members-computer-net-link/

[24] Lawrence, P. R., and Lorsch, J. W. (1967). Differentiation and integration in complex organizations. *Administrative Science Quarterly, 12*(1), 1-47. http://dx.doi.org/ 10.2307/2391211

[25] Liguori, E., and Winkler, C. (2020). *From Offline to Online: Challenges and Opportunities for Entrepreneurship Education Following The Covid-19 Pandemic*. Publications Sage CA: Los Angeles, CA.

[26] Linton, R. (1945). *The Cultural Background of Personality*. New York: Appleton-Century.

[27] Luppicini, R., and Walabe, E. (2021), Exploring the socio-cultural aspects of e-learning delivery in Saudi Arabia. *Journal of Information, Communication and Ethics in Society*, *19*(4), 560-579. https://doi.org/10.1108/JICES-03-2021-0034

[28] Masimba, F., Appiah, M., and Zuva, T. (2020, February 22). A Review of Cultural Influence on Technology Acceptance, Retrieved from https://ieeexplore.ieee.org/document/9015877

[29] McDonald, D. (1999-2000). Improved training methods through the use of multimedia technology. *Journal of Computer Information Systems, 40*(2), 17-20.

[30] Mohamed, A. H. H. M., Abdel Fattah, F. A. M., Bashir, M. I. A., Alhajri, M., Khanan, A. and Abbas, Z. (2021), Investigating the acceptance of distance learning amongst Omani students: a case study from Oman. *Global Knowledge, Memory and Communication*, *71*(6/7), 529-545. https://doi.org/10.1108/ GKMC-02-2021-0021

[31] Neeraj, M. (2018). End User Perception Towards Quality and Usability of E learning, Retrieved from http://hdl.handle.net/10603/ 213999

[32] Oyserman, D., Coon, H. M., and Kemmelmeier, M. (2002). Rethinking individualism and collectivism: evaluation of theoretical assumptions and meta-analyses. *Psychological bulletin*, *128*(1), 3-72. https://doi.org/10.1037/0033-2909.128.1.3

[33] Radha, R., Mahalakshmi, K., Sathish Kumar, Dr. V., Saravanakumar, Dr. A. R. (2020). E-Learning during Lockdown of Covid-19 Pandemic: A Global Perspective. *International Journal of Control and Automation, 13*(4), 1088-1099. Retrieved from http://sersc.org/journals/index.php/IJCA/article/view/26035

[34] Rajh, E., Budak, J., and Anić, I. D. (2015). Hofstede's Culture Value Survey in Croatia: Examining Regional Differences. *Društvena istraživanja: časopis za opća društvena pitanja*, *25*(3), 309-327. https://doi.org/10.5559/di.25.3.02

[35] Rao, P. (2011), E-learning in India: the role of national culture and strategic implications. *Multicultural Education & Technology Journal, 5*(2), 129-150. https://doi.org/10.1108/ 17504971111142 664

[36] Reynolds, P., Rice, S., and Uddin, M. (2007). Online learning in dentistry: the changes in undergraduate perceptions and attitudes over a four-year period. *British Dental Journal, 203*(7), 419-423. http://doi.org/10.1038 /bdj.2007.896

[37] Rizvi, Y. S., and Nabi, A. (2021). Transformation of learning from real to virtual an exploratory -descriptive analysis of issues and challenges. *Journal of Research in Innovative Teaching & Learning, 14*(1), 5-17. http://doi.org/10.1108/JRIT-10-2020-0052

[38] Rosenthal, U., Charles, M. T., and Hart, P. (Eds.) (1989). *Coping with Crises: The Management of Disasters, Riots and Terrorism*. Springfield, IL: Charles C. Thomas Publishers.

[39] Steyn, D., and Cronjé, J. (2006). *Interpreting cross-cultural blended teaching and learning along Hofstede's cultural dimensions*. Proceedings of e/merge, Pretoria, South Africa.

[40] Swierczek, F., and Bechter, C. (2010). Cultural features of E-learning: A Euro-Asian comparison. *Global Leadership through Digital Stories*. http://doi.org/10. 1007/978-1-4419-1551-1_18

[41] Tavangarian, D., Leypold, M. E., Nolting, K., Roser, M., and Voigt, D. (2004) Is e-learning the solution

for individual learning? *Electronic Journal of E-learning, 2,* 273-280.

[42] Tesar, M. (2020). *Towards a Post-Covid-19 'New Normality?': Physical and Social Distancing, The Move to Online and Higher Education*. SAGE Publications Sage UK: London, England.

[43] Vitoria, L. M. M. (2018). Students' perceptions on the implementation of e-learning: Helpful or unhelpful? . *The 6th South East Asia Design Research International Conference (6th SEA-DR IC).* Indonesia: Syiah Kuala University, Jln. Teuku Nyak Arief, Darussalam, Banda Aceh, Aceh,.

[44] Wells, P., De Lange, P., Fieger, P. (2008). Integrating a virtual learning environment into a second-year accounting course: Determinants of overall student perception, *Accounting and Finance, 48*(3), 503-518. http://doi.org/10.1111/j.1467-629X.2007.00249.x

[45] Wheeler, K., Byrne, J., and Deri, A. (2003). eLearning and Education for Sustainability (EFS). *International Review for Environmental Strategies, 4*(1), 95-105.

[46] Yoo, S. J., Huang, W. H., and Lee, D. Y. (2012). The impact of employee's perception of organisational climate on their technology acceptance toward e-learning in South Korea. *Knowledge Management & E-Learning: An International Journal, 4*(3), 359-378. https://doi.org/10.34105/j.kmel.2012.04.028

[47] Young, M. (1997). The community crisis response team training manual (Second Edition). Washington, DC: National Organization for Victim Assistance, Washington, DC. NASP Handout adaptation (Cultural Perspectives on Trauma and Critical Response) by Kris Sieckert. Retrieved from http://www.nasponline.org/NEAT/neat_cultural.html.

[48] Zaharris, P., Vassilopoulou, K., and Poulymenakou, A. (2001). Designing online learning courses: Implications for usability. Retrieved from http://www.japit.org

[49] Zhang, D., Zhao, J. L., Zhou, L., and Nunamaker, J. (2004). Can e-learning replace traditional classroom learning—Evidence and implication of the evolving e-learning technology. *Communications of the ACM, 47*(5), 75-79. http://doi.org/10.1145/986213.986216

[50] Zhu, X., and Liu, J. (2020). Education in and After COVID-19: Immediate Responses and Long-Term Visions. *Postdigital Science and Education, 2*, 695-699. https://doi.org/10.1007/s42438-020-00126-3

<Appendix A> Sample Questionnaire

1. Gender Male. Female
2. Age (In years completed)
3. Region
4. Location
5. Educational Level
6. Total Work Experience (in years)
7. For how long you are using e-learning (In years)
8. Mark your degree of agreement with the following statement. Mark 5, if you strongly agree, 4 for agree, 3 for neither agree nor disagree, 2 for disagree and 1 for strongly disagree
   a) The use of a device with a larger screen size makes e-learning more effective
   b) User-friendly devices make e-learning more effective
   c) High-Speed internet access encourages the use of e-learning
   d) E-learning makes relevant content of choice readily accessible
   e) More time is taken to identify the right content adversely impacts the interest in e-learning
   f) Video and live interactive based content attracts interest in e-learning
   g) E-learning resources can be used without any technical assistance
   h) E-learning is preferred over traditional classroom-based learning
   i) E-learning reduces overall cost with rapid delivery and offers better retention of knowledge
   j) The impersonal approach in e-learning makes it difficult to maintain learner engagement
   k) I often use e-learning
   l) E-learning is used only if it is user-friendly, faster response time and is easy to use
   m) E-learning is used only if it has an attractive user interface and can adapt to user needs and approach
   n) E-Learning is used even if it does not support live interactive course
   o) E-learning is used even if it does not support data loss recovery and resume function
   p) E-learning systems must have auto error detection and error handling
   q) E-learning systems must have compatibility with other such systems
   r) E-learning systems must meet technical compliance to standards
   s) Higher brand value of content in e-learning systems is important
   t) E-learning is a means of upgrading academic qualification
   u) E-learning increases the probability of getting a better job and better pay
9. The Lockdown inflicted by the Covid-19 Pandemic has changed my perception towards eLearning. YES. NO.
10. Rate these components of eLearning Experience on a scale of 1-5, where 1 is least effective, and 5 stands for most effective
    a) Continuity(learners are able to connect with particular elements in the subject
    b) Sequence Learners are able to relate with successive content and go more deeply and broadly into the subject
    c) Integration(Learners are gaining a unified view across several subjects

Rate your preference on these cultural dimensions

11. Individualism 1----------5----------10 Collectivism
12. Low Power Distance 1----------5----------10 High Power Distance
13. Low Uncertainty Avoidance 1----------5----------High Uncertainty avoidance
14. Achievement 1----------5----------Nurturing
15. Long term Orientation 1----------5----------Short term orientation
16. Number of E-learning Programs completed successfully till date----------

<Appendix B> Additional Tables Correlation Matrix and Factor Structure

<Table a> Correlation Matrix

Correlation	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	S14	S15	S16	S17	S18	S19	S20	S21
s1	1.000	.557	.348	.378	.252	.305	.177	-.029	.151	.077	.171	.133	.092	.069	.099	.108	.218	.106	.091	.162	.068
s2	.557	1.000	.526	.333	.293	.308	.206	-.027	.087	.190	.269	.204	.262	.103	.045	.308	.410	.375	.225	.193	.010
s3	.348	.526	1.000	.285	.289	.280	.116	-.006	.120	.136	.135	.258	.169	.210	.054	.241	.383	.382	.256	.129	.046
s4	.378	.333	.285	1.000	.319	.378	.136	.169	.437	.210	.308	.132	.072	.226	.320	.127	.112	.052	.024	.278	.260
s5	.252	.293	.289	.319	1.000	.229	.258	.042	.158	.082	.371	.305	.165	.276	.273	.215	.329	.332	.348	.278	.209
s6	.305	.308	.280	.378	.229	1.000	.237	.262	.303	.149	.264	.206	.090	.318	.234	.200	.251	.212	.208	.358	.328
s7	.177	.206	.116	.136	.258	.237	1.000	.330	.233	.077	.170	.212	.238	.350	.189	.275	.298	.291	.369	.391	.249
s8	-.029	-.027	-.006	.169	.042	.262	.330	1.000	.541	.129	.214	.175	.269	.292	.383	.126	-.004	.037	.135	.461	.485
s9	.151	.087	.120	.437	.158	.303	.233	.541	1.000	.212	.412	.232	.136	.159	.344	.010	.070	-.005	.055	.418	.565
s10	.077	.190	.136	.210	.082	.149	.077	.129	.212	1.000	.184	.224	.251	.298	.402	.227	.273	.299	.176	.248	.264
s11	.171	.269	.135	.308	.371	.264	.170	.214	.412	.184	1.000	.339	.125	.308	.191	.074	.288	.222	.392	.339	.445
s12	.133	.204	.258	.132	.305	.206	.212	.175	.232	.224	.339	1.000	.631	.359	.349	.383	.442	.354	.406	.271	.357
s13	.092	.262	.169	.072	.165	.090	.238	.269	.136	.251	.125	.631	1.000	.220	.322	.419	.337	.238	.280	.248	.258
S14	.069	.103	.210	.226	.276	.318	.350	.292	.159	.298	.308	.359	.220	1.000	.470	.359	.262	.347	.311	.323	.302
S15	.099	.045	.054	.320	.273	.234	.189	.383	.344	.402	.191	.349	.322	.470	1.000	.236	.206	.191	.204	.367	.337
S16	.108	.308	.241	.127	.215	.200	.275	.126	.010	.227	.074	.383	.419	.359	.236	1.000	.472	.420	.300	.248	.135
S17	.218	.410	.383	.112	.329	.251	.298	-.004	.070	.273	.288	.442	.337	.262	.206	.472	1.000	.633	.451	.345	.124
S18	.106	.375	.382	.052	.332	.212	.291	.037	-.005	.299	.222	.354	.238	.347	.191	.420	.633	1.000	.465	.343	.077
S19	.091	.225	.256	.024	.348	.208	.369	.135	.055	.176	.392	.406	.280	.311	.204	.300	.451	.465	1.000	.378	.298
S20	.162	.193	.129	.278	.278	.358	.391	.461	.418	.248	.339	.271	.248	.323	.367	.248	.345	.343	.378	1.000	.486
S21	.068	.010	.046	.260	.209	.328	.249	.485	.565	.264	.445	.357	.258	.302	.337	.135	.124	.077	.298	.486	1.000

<Table b> Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% Of Variance	Cumulative %	Total	% Of Variance	Cumulative %
1	6.080	28.951	28.951	6.080	28.951	28.951	3.104	14.780	14.780
2	2.410	11.476	40.427	2.410	11.476	40.427	2.757	13.128	27.908
3	1.865	8.882	49.309	1.865	8.882	49.309	2.616	12.458	40.366
4	1.223	5.823	55.133	1.223	5.823	55.133	2.382	11.342	51.708
5	1.061	5.054	60.186	1.061	5.054	60.186	1.780	8.478	60.186
6	1.053	5.015	65.201						
7	.892	4.247	69.448						
8	.753	3.586	73.034						
9	.669	3.187	76.220						
10	.639	3.044	79.265						
11	.603	2.873	82.138						
12	.517	2.464	84.602						
13	.510	2.427	87.029						
14	.468	2.228	89.257						
15	.451	2.146	91.403						
16	.421	2.006	93.409						
17	.331	1.578	94.986						
18	.306	1.458	96.445						
19	.293	1.396	97.840						
20	.230	1.094	98.934						
21	.224	1.066	100.000						

Note: Extraction Method: Principal Component Analysis.

<Table c> Rotated Component Matrix

	Component				
	1	2	3	4	5
s1	.099	-.021	.775	.024	.032
s2	-.085	.162	.784	.203	.117
s3	-.090	.184	.647	.233	.087
s4	.509	.093	.603	-.010	-.136
s5	.169	.085	.320	.577	.036
s6	.394	.045	.464	.089	.298
s7	.216	.050	.117	.166	.755
s8	.679	.173	-.126	-.129	.425
s9	.808	.068	.148	.049	.011
s10	.215	.618	.126	.051	-.145
s11	.480	.014	.134	.688	-.131
s12	.148	.643	.050	.424	.027
s13	.067	.728	.034	.092	.148
S14	.288	.433	.065	.210	.310
S15	.477	.589	.039	-.003	.041
S16	-.125	.592	.205	.095	.415
S17	-.148	.422	.309	.516	.293
S18	-.187	.380	.227	.511	.372
S19	.044	.201	-.001	.709	.350
S20	.510	.174	.110	.270	.461
S21	.726	.192	-.077	.282	.094

Note: Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 16 iterations.

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Submitted: September 1, 2021; 1st Revision: October 22, 2021; 2nd Revision: January 23, 2022;
Accepted: May 26, 2022