

Quality of learning experience, student satisfaction and perceived overall experience in the COVID-19 context

Quality of
learning
experience in
COVID-19

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Received 11 December 2020

Revised 4 January 2021

5 January 2021

Accepted 12 January 2021

Abstract

Purpose – The intention for this study was to explore any relationship that might exist between quality of learning experience (QLE), the second construct student satisfaction (SS) and the third construct perceived overall experience (POE) among undergraduate students within the higher education context. This study also attempts to explain the path direction between QLE, SS and POE.

Design/methodology/approach – The researchers utilized structural equation modeling to analyze the variables considered for this study – QLE, SS and POE and for hypotheses testing. Respondents for this study were medical students' coordinators of the undergraduate level of medical colleges in the 28 states of India. Data collected for the study were possible by utilizing a questionnaire that was emailed to these student coordinators. The emailing effort returned 198 (*n*) filled questionnaires (complete) representing 198 institutions offering undergraduate-level medical programs out of a total of 542 institutions that offer undergraduate medical programs.

Findings – Findings from this study confirm the relationship between QLE with SS, and PLE. Interestingly, the findings established a significant relationship between SS and POE.

Practical implications – Decision-makers and administrators of higher education institutions (HEIs) can utilize the findings from this study to focus on strengthening important elements of QLE in ways that positively impact SS and POE of students taking online courses and program offerings. The study reiterates the importance of course content, course structure, lecture-delivery quality, instructor mentoring and student-instructor interactions on SS and POE. The role of SS in reinforcing confirmation, perceived usefulness, perceived openness of the online courses and the perceived reputation was established. This relationship is key to administrators while they focus on improving SS and building on the institutions' reputation in addition to their efforts to support marketing and enrollments during the pandemic.

Originality/value – Researchers in the past have examined the relationships between QLE and another construct of this study – SS. Past research has also examined the relationship between QLE and POE. However, there is not enough research exploring the relationship between SS and POE. This study establishes the relationship between SS and POE that benefits decision-makers in higher education.

Keywords Higher education institutions, Quality of learning experience, Student satisfaction, Perceived overall experience

Paper type Viewpoint

Introduction

The pandemic COVID-19 has brought in unprecedented challenges to every facet of human existence, and the field of higher education has been affected by the same measure. Campuses



Journal of Applied Research in
Higher Education
Vol. 14 No. 1, 2022
pp. 507-520

© Emerald Publishing Limited
2050-7003

DOI [10.1108/JARHE-12-2020-0440](https://doi.org/10.1108/JARHE-12-2020-0440)

across the globe have closed and adopted online modes for teaching and learning. The pandemic has disrupted the normal life of learners, and about 320 million learners stopped attending schools, colleges, universities and other educational institutions. Considering that the number of learners who have been affected by the pandemic in India is close to the entire population of the United States of America, the need to assess factors that influence student satisfaction (SS) is greater than ever before. India is home to 993 universities, 39,931 and 10,275 independent/autonomous institutions (Kumar, 2020). Among several challenges that these educational institutions face in coping with challenges brought upon by the pandemic, the most obvious ones are accessibility to the Internet, trained faculty, awareness of online modes of accessing content, mentoring, student-instructor interactions and many more. While innovative methods have been used and educational institutions continue to improvise in adapting to these changes, exploring the impact of this situation from the perspective of the students is extremely important moving forward. The positive side to these innovative practices could mean greater personalized learning, increased access to educational opportunities from remote locations, access to resources and resource personnel across regions, the proliferation of technologies across the country and a paradigm change in the education system in the country. Academia in India and the world find opportunities to reform education systems in the face of this outbreak. A study by Rajhans *et al.* (2020) reports that 78% of the optometry educators surveyed switched to e-learning, using multi-device supporting tech tools, dedicated portals and social media apps with a great deal of confidence, proving that the COVID-19 is a constructive disruptor.

Need for the study

The challenges brought about by the pandemic have far-reaching impacts on students that attend higher education institutions (HEIs) due to the rigor required in content, training, learning and assessment and the importance of skill development for these students. The impact of the pandemic has been disruptive to medical education and the training that medical students must have access to Chick *et al.*, (2020). As a case in point, research carried out on pediatric postgraduate students in India shows some very encouraging and positive results in support of the online modalities of learning in the context of the pandemic caused by COVID-19 (Agarwal and Kaushik, 2020). The study considered was done on 77 student respondents of whom 87% belonged to the postgraduate level. Most of these respondents reported that the online sessions addressed the needs of the students and were appropriate to their clinical practice. They also found them to be interesting and enjoyable, and that online classes should be integral to their medical postgraduate curriculum. These students reported better utilization of time and greater access to learning materials as motivational factors influencing their perception of online classes; they also reported technical issues, time limits on zoom sessions and limitation on the number of participants as inhibiting factors for their online classes. Overall SS was found to be comparable to previous studies carried out by Scagnoli *et al.* (2019).

While there are studies that have focused on assessing SS, the researchers found no research that explores the influences of quality of learning experience (QLE) on perceived overall experience (POE), and the impact of SS on POE. The researchers set out to explore these impacts with an intent to utilize outcomes of this empirical study in shaping strategies and actions, and initiatives at HEIs.

Literature review and hypotheses

Student satisfaction (SS), quality of learning experience (QLE) and perceived overall experience (POE)

Though many institutions have moved courses and program offerings online, prior research shows that students preferred face-to-face (F2F) instructions. These students also reported

greater support for the F2F modality with lesser amount of material that students had to go through. Online instructions brought in communication problems, with students perceiving faculty as less helpful. This resonates with problems faced by students in India compounded by the language being used by the online platform, difficulty in getting timely feedback and lack of access to the Internet and computers. This is reiterated by [Bollinger and Martindale \(2004\)](#) who showed that the most significant influences on SS are communication, feedback, content knowledge and accessibility. Their work is the basis for the construct utilized by the authors for assessing SS. Their work also closely ties with the role of the instructor as a predictor of SS, and instructors that examine student evaluations are inclined to take up concerted efforts aimed at affecting improvements to the learning environment – the construct of QLE considered by the researchers for this study. The instructors' ability to think out-of-the-box for ways to engage students addresses the unique requirements of each student taking online courses while contributing to students' knowledge, skill development and proficiencies development is evidenced by course content structure, course content, lecture delivery quality, instructor-mentoring and student-instructor interactions ([Fish and Wickersham, 2009](#)). These instructor-tied initiatives are the items considered for QLE construct – course structure, lecture delivery quality, course content, instructor mentoring and student-instructor interactions. The researchers considered in detail the Purdue Rating Scale used by researcher Remmers, 1960, and the study carried out by [Fish and Wickersham \(2009\)](#) to consider QLE aspects of the online modality of instruction. Course structure related to the creation of modules, specific and clear learning objectives and expectations. Course content pertains to the coverage of the material, assessments in the course, contemporary developments in the field, opportunities to apply knowledge gained and engaging in problem-solving in real-world situations. Lecture delivery quality has a bearing on the effectiveness of communication, while the instructor conveys the material in ways that contribute to learning. Student-instructor interactions provide the freedom and opportunities to students to participate in discussions, ask questions, bring in their views to problems being discussed, availability of the instructor and the instructor's response to students' questions. Frequent interactions between the students and the instructor were found to be necessary for reinforcing learning, strengthening learning interest and widening student comprehension of the content shared ([Gagne, 1985](#)). Quality of learning experience also speaks to the role of instructor mentoring, the instructor identifying student learning, facilitating better learning while explaining materials and maintaining student motivation. The information system success approach to assessing SS indicates the importance of the system, information and instructional quality ([Kim et al., 2012](#)). Careful observation of these QLE items indicates their connectedness to communication – the instructor's role in the design, delivery and support that improve communication, with communication being a key item for SS. Instructor mentoring has a bearing on an important SS item, feedback. The availability of the instructor helps explain content, address questions, reinforce learning and motivate students to contribute to accessibility, an important item of SS. This discussion leads us to the first hypothesis

H1. Quality of learning experience influences student satisfaction.

QLE items such as course structure, lecture delivery quality, the course content, instructor mentoring and also student-instructor interactions contribute to students' POE items such as perceived openness, usefulness, confirmation and reputation. The items considered under QLE by the researchers were built on studies done by [Peltier et al. \(2003\)](#) and the perspective model enunciated by [Marks et al. \(2005\)](#). Each of these items was found to be impactful on the construct perceived overall learning experience of students ([Peltier et al., 2007](#)). Systematic efforts of instructors in developing the course structure, populating the course with contemporary and research-based content, utilizing pedagogy that contributes

to the quality of lecture delivery, assessing learning, facilitating student learning, motivating students and remaining accessible to students' questions and concerns are crucial to students' perceived confirmation (performance of online course delivery meeting their expectations), usefulness and reputation for the course offered online. The importance of course content in an online context cannot be overemphasized; course content must be easy to access, contemporary, relevant to the skills sought by students and the industries that they wish to be associated with and should be delivered in interesting ways (Evans, 2001; Drago *et al.*, 2002; Jones and Kelley, 2003). Instructors guide students through the learning process and therefore play the role of facilitator, stimulating, guiding and challenging students (Sherron and Boettcher, 1997; Orr and Bantow, 2005; Kinuthia, 2005). They are often expected to facilitate rapport and motivate students (Lealock, 2005). The dynamic nature of course structure and content improvements based on student evaluations has a bearing on students' perceived openness to design, development and delivery of the course or program offerings. Therefore, the researchers propose the second hypothesis for this study

H2. Quality of learning experience influences perceived overall experience.

When students' performance in an online course meets their expectations, there is a confirmation of their satisfaction. Among the few who have researched the expectation-confirmation relationship, Alraimi *et al.* (2015), consider openness, usefulness, confirmation and reputation (all POE elements) as being connected to SS. These factors were found to be important in students' intention to continue utilizing online learning opportunities. The researchers set out to explore the influence of SS elements such as accessibility, content knowledge, feedback and communication on students' perception of usefulness, openness, confirmation of expectations and their view of reputation of the online instructions received at HEIs. For example, student-instructor interactions are found to be critically important to students staying connected via a virtual learning community (Rothaermel *et al.*, 2001; Drago *et al.*, 2002). Greater intensity of interaction between students and their instructor has been found to positively impact the reputation of a HEI due to the increased scope and scale of the educational offer while considerably reducing educational costs. A positive reputation can only enhance the student-university relationship in the educational markets (Yang *et al.*, 2008). Reputation being integral to POE for a student is considered strategic in terms of its influence on referrals, endowments and positive word-of-mouth publicity in attracting new students. Further, reputation stems from the academic rigor, standards of education offered via online, quality of delivery, interaction quality and mentoring, thereby positively influencing the perception of the external community (Carr-Chellman, 2006). These interactions were also found to impact positively the kind of rapport that students of an online course built over a period and, in turn, influence the development of a learning environment (Wallace, 2004). The course structure has been found to impact the organization of course material, clarifies expectations from students (Gurak and Duin, 2004), states clear guidelines and instructions (Fraser, 2012), facilitates clear and useful lectures (Jameson Boex, 2000), helps in utilizing available technologies (Ballantyne *et al.*, 2000) and therefore contributes to perceived usefulness of the course and greater possibility of greater perceived confirmation. Student satisfaction is considered a significant influence on students' willingness to continue utilizing online learning opportunities and their intention to suggest these opportunities to other students (Lu *et al.*, 2019). This discussion encouraged the researchers to explore the influence of SS on POE. Establishing this relationship would lead to the discussion that SS should be managed in ways that positively impact POE. In other words, greater SS will ensure stronger student perception of confirmation, usefulness, openness and sense of reputation of the online offerings. Therefore, the third hypothesis is

H3. Student satisfaction influences perceived overall experience.

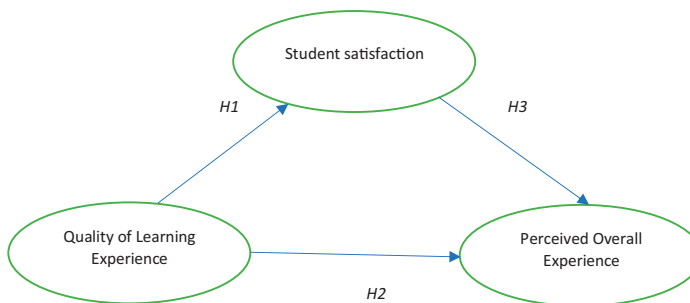
Conceptual model

Using the literature on the several dimensions that influence SS, the following model having the exogenous and endogenous variables has been formulated in Figure 1, explaining the relationships between QLE, POE and SS.

Methodology

Sample (respondent nature)

While studies have focused on postgraduate students of institutions that offer specialized medical education (pediatrics and ophthalmology fields as referred to in this study) in India, perceptions of undergraduate medical students have not been researched in the COVID-19 pandemic context. The researchers, therefore, set out to explore QLE, SS and POE among undergraduate medical students. The researchers were also keen to test the impact of QLE on students' POE and SS. Of interest was to explore the influence of SS on the POE for these students who migrated to the online teaching and learning modality necessitated by the Government of India lockdowns in the face of the pandemic. The researchers set out to reach every medical college (using probability sampling) that offered undergraduate medical programs in India, and therefore sent out emails to all student coordinators of all these colleges. The reason that medical colleges at the undergraduate level were considered is that a co-author works at a medical college and recognizes the unique challenges that medical students face during pandemics, especially given the nature of medical education requiring practical exposure, demonstrations and hospital visits. There are a total of 542 offering undergraduate medical programs in India. The authors sent out the questionnaire via emails to the students' coordinators of these colleges as listed on their web pages. Most of the colleges had more than one student coordinator and therefore displayed more than one email id for their student coordinators, resulting in a final mailing list of 1,045 emails being sent. The responses were received from 327 colleges, but only 198 colleges responses were



Quality of Learning Experience (QLE)	Perceived Overall Experience (POE)	Student Satisfaction
• Course structure • Course content • Lecture delivery quality • Instructor-mentoring • Student-instructor interactions	• Usefulness • Confirmation • Reputation • Openness	• Communication • Feedback • Content Knowledge • Accessibility

Figure 1.
Exogenous and
endogenous variables

complete and useable for the study. The authors consider the response rate of 36.5% (198) as a good representative sample of feedback received from the email list of medical colleges (542). The response rate could have possibly been higher if the pandemic had not disrupted all spheres of education so hard in India and globally.

Measures

For collecting data, a structured questionnaire was used. The research instrument used had the Likert scale (five-point scale) for the variables considered for this study. The Purdue rating scale was used to measure QLE: course structure (4 items), course content (8 items), lecture delivery quality (3 items), student-instructor interactions (4 items) and instructor mentoring (12 items)). POE was measured considering the research work of [Alraimi et al. \(2015\)](#); items considered include usefulness, confirmation, reputation and openness. SS was measured using the very popular items that include communication, feedback, content knowledge and accessibility ([Bollinger and Martindale, 2004](#)).

Data analysis

The researchers conducted a confirmatory factor analysis and then also carried out structural equation modeling as part of the analysis. The survey instrument was distributed via email to students' coordinators (1,045 emails used) of medical colleges in the twenty-eight states of India. The email distribution returned with 327 filled-in questionnaires. Among these, only one-hundred and ninety-eight were complete and useable for the study. Of the 198 respondent institutions, 43% were male student coordinators and 57% were female student coordinators.

Results

The analysis began with the measurement of reliability that speaks to the reliability of the research instrument on the results if it was administered several times ([Babbie, 2004](#)). The results of the reliability analysis for this study are presented below.

[Table 1](#) numbers indicate that the constructs considered for this study have reliabilities above 0.70 ([Nunnaly, 1978](#)), with mean scores that have been calculated taking into consideration equal weighting of means of all the items for the constructs considered for this study. The range of Cronbach's alpha values for the three constructs are 0.855, 0.811 and 0.804 for QLE, SS and POE, respectively.

Demographics of student coordinators

Table 1.
Reliability:
cronbach alpha

Variables	Reliability (cronbach alpha)
Quality of learning experience (course structure, course content, lecture delivery quality, instructor-mentoring, student-instructor interactions)	0.855
Student satisfaction (usefulness, confirmation, reputation, openness)	0.811
Perceived overall experience (communication, feedback, content knowledge, accessibility)	0.804

Demographic variables	Category	Number (<i>n</i>)	Percent
Gender	Male	85	42.92
	Female	114	57.07
Age	18–22	23	11.61
	23–27	148	74.74
	28–32	20	10.10
	≥33	7	3.53
Year of study	Freshman	6	3.03
	Sophomore	26	13.13
	Junior	29	14.64
	Senior	137	69.19

Bivariate correlations and descriptive statistics			
	1	2	3
(1) Quality of learning experience (QLE)	1.00		
(2) Perceived overall experience (POE)	0.70***	1.00	
(3) Student satisfaction (SS)	0.77***	0.79***	1.00
Mean	4.19	4.30	4.24
Standard deviation	0.82	0.78	0.94
Minimum	2	1	1
Maximum	5	5	5
<i>N</i>	198	198	198

Note(s): **Correlation is significant at the 0.01 level

Confirmatory factor analysis

For analysis, the researchers used confirmatory factor analysis while assessing construct validity for this study. Convergent validity reiterates the construct that is evident from the correlations of independent measures for all the constructs considered for this study. While analyzing convergent validity loading, estimates and reliability of the construct were assessed. CFA enabled measuring of the uni-dimensionality, discriminant and convergent validities. The results of CFA offer overall fit indices ($\chi^2 = 71.199$), with $df = 234$ (for chi-square), RMSEA = 0.027, GFI = 0.945. From the analysis, the values for the following are AGFI = 0.920, CFI = 0.889 and NNFI = 0.976. Table 2 shows these important fit statistics. Results in Table 2 indicate a reasonably good fit of the model with RMSEA = 0.027, as research shows $0.05 < RMSEA < 0.08$ as being a good fit (Hair *et al.*, 2009). Results also show the comparative fit index value (0.889) reinforces the reasonably good fit for the considered model.

	χ^2	<i>p</i> -value	RMSEA	GFI	AGFI	NNFI	CFI
Model for this study	71.199	0.174	0.027	0.945	0.920	0.976	0.889
Course structure	2.304	0.314	0.026	0.992	0.968	0.994	0.997
Course content	6.847	0.230	0.041	0.985	0.958	0.970	0.984
Lecture delivery quality	12.518	0.018	0.076	0.974	0.927	0.810	0.904
Instructor mentoring	3.793	0.148	0.065	0.989	0.953	0.956	0.984
Student-instructor interactions	7.516	0.183	0.049	0.983	0.952	0.976	0.987
Student satisfaction	2.258	0.321	0.024	0.992	0.969	0.995	0.997
Perceived overall experience	5.094	0.076	0.087	0.985	0.935	0.915	0.970

Table 2.
Fit statistic results

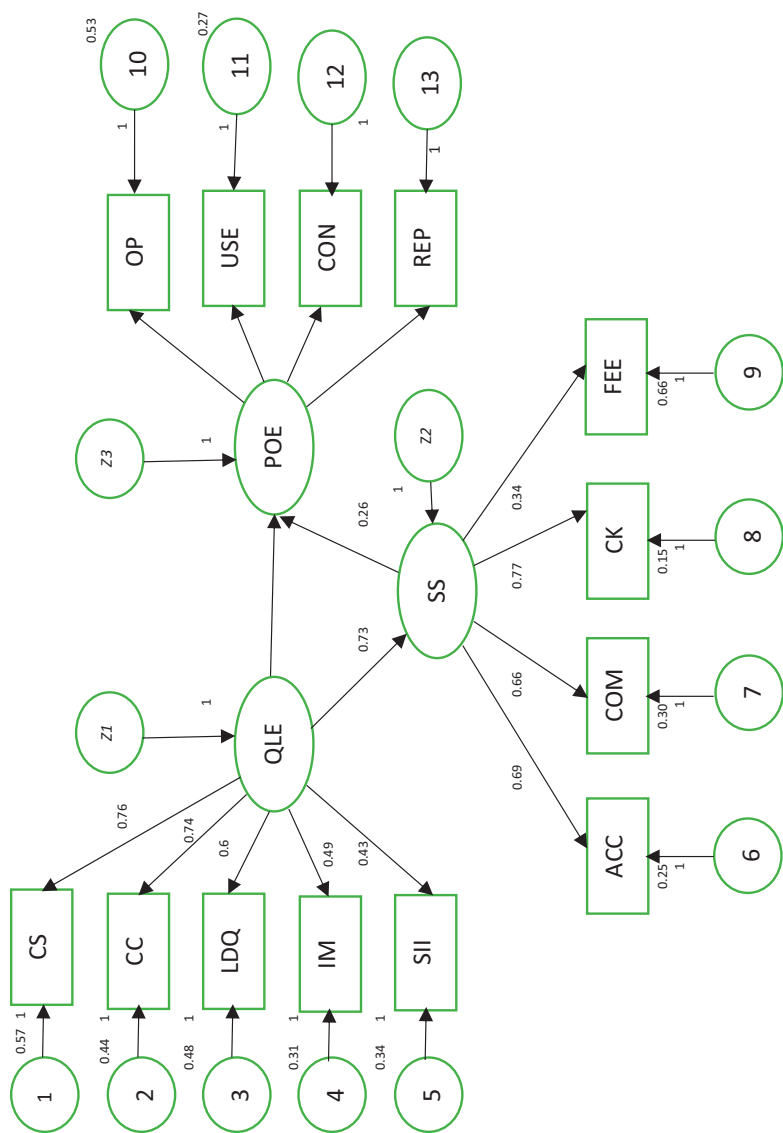


Figure 2.
A restructured model
for this study

Table 3.
Statistics of GFI

Goodness-of-fit stats	Values	Values range
χ^2	71.199	$p > 0.05$
Df	62	≥ 0
χ^2/df	1.164	2 to 5
GFI	0.945	> 0.90
RMSEA	0.027	< 0.08
AGFI	0.920	> 0.90
TLI	0.976	> 0.90
CFI	0.980	> 0.95
NFI	0.917	> 0.90

Goodness of fit index value for the model considered for this study is 0.945 and indicates a good fit for the model considered for the study, while a GFI value of 1.0 indicates a perfect model. The adjusted goodness of fit for the model has an index value of 0.920 which also reiterates the goodness of fit. The suggested Tucker–Lewis value equal to 0.90 or greater is considered as a good fit for the suggested model. Tucker–Lewis index value for the model considered for this study is 0.976 (which is greater than the prescribed 0.90), indicating a good fit. CFA for the measurement model is presented below and is based on the evaluation of the goodness of fit from [Table 2](#).

Measurement model

The researchers fit a structural model to QLE, SS and POE as shown in [Figure 2](#). From the figure, it is clear that the three paths – QLE and its connectedness to SS, QLE and its connectedness to POE and SS and its connectedness to POE – have standardized path coefficients that are significant. These path coefficients are also not sequential, utilizing the Wald tests. Goodness of fit indices are presented in [Table 3](#) for the considered model.

[Table 3](#) values show that the data collected have a good fit with $a < 2$ ratio between chi-square value and df; a higher value of > 0.90 for GFI, NFI, CFI and AGFI; and value < 0.05 for RMSEA.

As the next step in the analysis for this study, SEM (AMOS software utilized) was utilized to evaluate assumed relationship(s) as shown in [Figure 1](#). Several researchers have advocated the use of structural equation modeling; models with RMSEA value < 0.08 as being a good fit ([Browne and Cudeck, 1992](#)), models with GFI, CFI and NFI with values greater than 0.90; and AGFI with value greater than 0.80 as being good fit ([Chin and Todd, 1995](#)).

From the estimates in [Figure 2](#), QLE has a significant positive relationship to SS (with a coefficient = 0.51, p value (=0.000) < 0.05) and supports [H1](#) hypothesis. QLE has a significant and positive relationship on POE (coefficient = 0.47, p (=0.000) < 0.05) and supports [H2](#)

Paths	Estimates(β)	Se	Cr	p	Result
1. (Student satisfaction) SS → QLE (quality of learning experience)	0.741*	0.182	4.060	0.000	Supports H1
2. (Perceived overall experience) POE → QLE (quality of learning experience)	0.502*	0.156	3.211	0.001	Supports H2
3. Perceived overall experience (POE) → (SS) student satisfaction	0.264*	0.078	3.362	0.000	Supports H3

Table 4.
Testing of hypotheses

hypothesis of this study. SS has a significant and positive relationship with POE (coefficient = 0.35, $p (=0.000) < 0.05$) and supports H3 hypothesis of this study.

Hypothesized model

As indicated in Table 4 and reading regression weights, it is clear that QLE to SS ($t = 4.060$; $p < 0.05$), QLE to POE (t value of 3.211; $p < 0.05$) and SS to POE (t value of 3.362; $p < 0.05$) are found to be significant.

QLE experience and SS have been found to significantly impact POE. Hypotheses H1: QLE experience influences SS (standardized path coefficient of 0.741), H2: QLE influences POE (standardized path coefficient of 0.502) and H3: SS has an influence on POE (standardized path coefficient of 0.264) receive support.

Discussion

The findings of this study reiterate the influence of QLE on POE for students – communication, feedback, content knowledge, accessibility items that were considered for this study. Curriculum planners, educators and administrators must focus on design and delivery methods (QLE: course structure, course content, lecture delivery quality, instructor-mentoring, student-instructor interactions) in ways that enhance students' POE (H2). The pandemic time has thrown several challenges for students, curriculum planners, educators and administrators and has had impacts on SS levels. The study results revealed that the QLE would positively and significantly influence SS (usefulness, confirmation, reputation, openness, H1). This result suggests that educational institutions must focus on QLE to ensure that SS is maintained. Dedication to the development of right resources influences students' perception of their learning experience and their overall satisfaction (Shahsavari and Sudzina, 2017). Another study in Vietnam carried out by Pham *et al.* (2019) also indicates that instructor inputs, course materials, delivery systems and other support systems were crucial in contributing to SS. Interestingly, this study also shows the positive influence of SS on POE (H3). Educators and administrators must understand the role of SS in influencing POE (communication, feedback, content knowledge, accessibility), as increasing number of universities implement student-caring initiatives in ways that businesses care for their customers.

Conclusions

This study was taken up to assess the influence of QLE, SS and POE in the field of higher education during the pandemic. There have been a lot of research studies that have explored the influence of QLE on SS. A study of literature shows no research that focuses on the influence of QLE and SS on PLE. A study carried out by Alqurashi (2019) on SS indicated a significant relationship between the interaction of the learner and course content and students' satisfaction and a significant relationship between the interaction between students and the instructor and students' satisfaction.

Findings from the current study also confirm that QLE and SS are significantly related. Osman and Saputra (2019) explored the role of QLE and SS but the direct path of QLE and SS was found to be not significant. Further, the study by Alqurashi (2019) establishes the relationship between the interaction of students and instructor and PLE.

The current study enabled the researchers to evidence similar findings; the relationship between QLE and POE is significant. From the path coefficients calculated in this study, the direct path between QLE and SS was established in support of Hypothesis 1. Cores-Bilbao *et al.*'s (2019) research evidences that QLE influences certain psychological states such as the usefulness of taking online courses. Findings from this study reinforce the

relationship among QLE and POE. This study also confirms the relationship between SS and POE.

Practical implications

It is evident that the QLE influences SS and the direct path was confirmed from the study. This finding would mean that policymakers in HEIs should focus on aspects that center around course content – instructor-delivered content (Benbunan-Fich, 2010) – Internet-focused content (Bisoux, 2007), learning outcomes and assessments (Smith, 2001) while trying to improve SS. HEIs must strive to encourage instructors toward developing content that is easy to access, is contemporary and is need-based (Evans, 2001). There should be a focus on a course structure that provides clear guidance to students, utilizes available technologies and that on which each instructor should stay organized (Nelson and Lynch, 1984). Instructors must also be made aware of the paradigm shift in conventional teaching to playing the role of a mentor and move from being an ultimate controlling figure to being one among students.

HEIs must encourage and train instructors in tools, technologies, pedagogy and media for improving student-instructor interactions and in the process contribute to improved connectedness, rapport and perceived overall quality of learning among students. This study also confirms the relationship between QLE and POE. This implies that HEIs must focus on all QLE items to ensure a positive influence on students' confirmation. It is only logical that students have certain expectations from online course offerings, and it is important that performance and expectations must match for students to advocate for online courses moving forward (McKeown and Andersen, 2016). Focus on QLE items would also ensure that students perceive greater use of online courses and trust that course offerings are being continuously improved. Strategies, actions and initiatives in this direction should go a long way in building the reputation of these courses and the institutions among the student community. QLE items such as instructor-mentoring and student-instructor interactions are considered integral to the support experience and important contributors to SS (Alemu and Cordier, 2017). Another study that validates the need to focus on QLE items considered for this study is the research carried out by Sembiring (2018) that reiterates the importance of design, instruction, interactivity and mentoring as contributors to SS. POE played an important role in students' decision to return for the next semester (Styron, 2010). Interestingly, this study also evidenced that factors such as learning experience, interaction (QLE) played an important role in SS and their decision to return for a subsequent semester. Educators and administrators will benefit from understanding the relationship between the variables to develop and deliver strategies around these variables that impact SS and retention.

Directions for future research

The COVID-19 pandemic has brought enormous stress on institutional resources, administrators and students. This study confines to responses gathered from the twenty-eight states of India, and therefore the findings cannot be generalized to other countries. However, India is the second-most populous country in the world and has a generous distribution of HEIs in the medical field, and therefore the findings can be applicable in equally or less populous countries with similar infrastructure and economic fundamentals. The responses are also confined to medical education and the level students of the undergraduate-level programs. This research can be expanded to gather responses from administrators, instructors and other stakeholders of HEIs to compare findings. Future research can also compare the influence of variables considered for this study – QLE, SS and POE for different delivery modes that might include synchronous and asynchronous modes.

The authors have over the past year had opportunities to survey students' preferences for different delivery modes in their classes and have had surprising results. The pandemic has forced institutions to fast-track technology adoption that generally facilitates flexibility, accessibility in course design and delivery and supports greater interaction. Technology adoption in countries like India comes with several other challenges that include the availability of Internet services, bandwidth and affordability for students. These factors must be considered for their influence on QLE, SS and POE.

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Further reading

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