

The Evaluation of the Students about the Quality of Courses during the Pandemic Time Due To Wearing Face Masks and Social Distance

Rahman Tafahomi¹

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ABSTRACT

The pandemic condition changed the style of teaching and learning in the wide world. Particularly some measurements such as wearing masks and social distance influenced the quality of the education in higher education. A five-scale Likert questionnaire was designed to ask the architecture students to evaluate the quality of the delivery of the theoretical courses in the department. SPSS was applied to analyze data with quantitative methods. The results revealed that the students were generally satisfied with the courses' quality and delivery methods. However, the Chi-square analysis demonstrated that just a few factors were associated with the quality of the delivery of the courses and other factors did not statistically associate with the evaluation of the students. In conclusion, the students evaluate the quality of the teaching in a holistic approach and apparently contextual factors influence the students' judgment during the pandemic time of teaching and learning.

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Keywords:

Architecture students, delivery of courses, social distance, theoretical courses, wearing face masks

INTRODUCTION

Covid-19 is one of the significant and unprecedented situations that have affected the lifestyle of the inhabitants of the world widely and particularly in modes and methods of education such as increasing remote, online, blended learning, activities with computer, and self-learning (Delialioğlu & Yildirim, 2007; Gülbahar & Madran, 2009; Karagöz & Rüzgar, 2021). The report of UNESCO reveals that the pandemic changed the educational system and procedures of 1.5 billions students in more than 60 countries in the world (UNESCO, 2020). Despite the experimental achievements in distance teaching and learning such as blended and online methods, seemingly the pandemic has created a specific condition that all ideas for teaching and learning have converted to a hypothesis for examination to innovate possible alternatives. In higher education, blended learning was recommended to teach the educational modules remotely. Many universities have planned to achieve an online infrastructure for distance and blended learning but with different levels of accomplishment (Allen et al., 2011; Graham, 2009; Woolfolk, 2016).

Architecture education is constructed based on design studios in terms of practical and hands-on activities for the students in terms of learning by doing (Schon, 1987). Other clusters of the courses support architecture design studios such as theoretical courses importantly history, building technology, and elective modules (Tafahomi, 2021a). Normally all courses are presented in the design studios although in some departments the theoretical courses are arranged specific rooms (Tafahomi & Nadi, 2021). In this case, despite the trends to adapt the classroom arrangement to the topic of the modules, normally the theoretical courses are delivered in the same arrangement of the room. Seemingly, the space arrangement is the same and just the topics and lecturers are changed occasionally (Tafahomi, 2021b).

The University of Rwanda issued instructions to protect the students and staff based on measurements in the country and the obligatory face mask-wearing, social distance, and blended learning model. The students encountered three lockdowns in the city and campus to shift the face-to-face classes to blended learning to protect the whole participants from the pandemic. Nonetheless, the programs were shifted to on-campus activities due to new measurements, the capacity of the internet infrastructure, the problems of disconnection, and archives of educational materials (Garrison & Kanuka, 2004; Powell, 2011). Both theoretical and practical courses took place in the design studios in face-to-face teaching mode. The design studios include

¹Department of Architecture, The University of Rwanda, tafahomi@gmail.com, orcid.org/0000-0002-7172-1302

a big room with portable drawing tables, normal desks, chairs, and shelves for archiving the materials. Both lecturers and students are involved to arrange the design studio with the form of raw-column, U-shaped, grouped, or free forms (Lee, 2005; Tafahomi, 2021b). It means that although the social distance was an obligation for everyone to respect the measures, the students sometimes sit closer based on the limitation of equipment in the classrooms and psychological needs (Stifel et al., 2020).

Despite the different forms of the seating position (Salkind, 2008), the pandemic condition obliged both lecturers and the students to use face masks and social distancing in the studios and classroom activities. Although the studios were the same, the students and lecturers found themselves in a new position that made communication more difficult (Tafahomi, 2021c). It means interactions among the instructors and the students were constructed based on the voice of the lecturers, clarity of the sentences through face masks, the level of stress on the topics and themes, gestures and physical activities of the presenter, and the questions and answers section in the theoretical sessions. While theoretical courses also enjoy the PowerPoint presentations and graphical content to facilitate the learning process, the explanation, dialogue and discussion between the lecturers and the students, the key aspects of the learning process take the position in the reciprocal interactions that are called in terms of apprenticeship activity in the design studio (Schon, 1987; Tafahomi, 2021a).

In this context, it was observed that both lecturers and the students are not satisfied with the delivery of the courses that it appeared in exam reports, projects, and the final marks. In this regard, to discover the relation between wearing face masks and social distance in the delivery of educational materials, this research is designed to evaluate the perception of the students about the quality of the courses and the activities of the lecturers in the theoretical modules based on the questionnaire structure. To achieve this target an online questionnaire based on the Likert Scale was designed to discover the opinions of the students based on the hypothesis that there is an association between wearing face masks and social distance and the level of satisfaction of the students with the theoretical modules, which are formulated below:

H0: there is no association between the qualities of the delivery of the theoretical courses with wearing face masks and social distance and the level of satisfaction of the students with the quality of the course.

H1: there is an association between the qualities of the delivery of the theoretical courses with wearing face masks and social distance and the level of the stratifications of the students regarding the quality of the course.

Studies on Effects of Face Masks and Social Distance on Teaching Activities

COVID-19 has created an unexperienced situation in the world that each country attempted to tackle with the problem based on the shared experiments in the world and capacities in the context. To highlight the effects on higher education, the report revealed that more than 1.5 billion learners in 185 counties faced the closing of universities due to lockdowns during the pandemic time and shifting to other modes of learning (Marinoni et al., 2020). For this reason, each county has taken into consideration some measures to avoid spreading the disease such as wearing face masks, social distance, and sanitization of hands based on the policy and cultural factors of the county. Therefore, the pandemic measurements were added into the context of higher education as the condition of teaching and learning.

Many studies have reflected the pandemic's positive influence on distance, blended, and online learning. For example, the studies mentioned the acceleration of distance learning (Buldan, 2021), the positive feeling of online teaching (Ersin et al., 2020), and the integration of practical activities in blended learning (Delialioglu & Yildirim, 2007; Gülbahar & Madran, 2009; Tafahomi, 2021d). In the negative aspects, the studies highlighted the stress and anxiety among the users in the online activities (Naylor & Nyanjom, 2020), limitation to access to the materials (Apriyanti, 2020), and uncertainty in the way of education (Holdheide, 2020; Scott & Harper, 2020). Nonetheless, the study revealed that the students presented contradictive answers to the questionnaire on the effectiveness of distance learning. For example, the analysis presented that the students who participated in the online courses were more satisfied with the learning outcomes than others who did not participate (Avcı & Oruc, 2020).

Nonetheless, keeping a classroom active when all of the participants have worn face masks and taken into account personal distance as a social measurement is unprecedented activity. The study underlined that

teaching with face masks not only reduce the quality of pronunciation but also limit the possibility to guess words and topic by observing lips movement (Will, 2020). In this way, the students face a limitation to get the stress, tone, and emotion from the instructor. Importantly, wearing face masks reduce the level of oxygen in the blood and increases dioxide for educators and educated participants in the classroom and changes the breathing quantity and rhythms although the level has not been indicated (McKeever, 2022). In addition, the study mentioned that when half of the face is covered with a mask, communication is so difficult due to the quality of the voice and facial expression (O'Hagan et al., 2022) which makes it difficult to read the emotion of participants in social interaction (McKeever, 2022).

The role of the teacher in the study was mentioned as one of the important factors to shape the training of the students in the education process (Morgan & Shackelford, 2018). Education in architecture has rooted in the interaction between the students and instructors who is the leader of the design studio (Schon, 1987; Tafahomi, 2022). The relationships between the instructor and the students follow the interactions in the sessional meetings to discuss the design project through critics and comments that have emerged between the students, instructor, and the design project (Bold & Hutton, 2007; Franz, 1994; McClean & Hourigan, 2013; Tafahomi, 2021a). It was widely discussed that architectural education uses phenomenology and interpretation based on a fundamental hermeneutic to understand, interpret, and explore the meaning and objective of the design project (Krippendorff, 2003; Mugerauer, 1995; Mugerauer, 2014) through physical (Franz, 1994; Schon, 1987), conceptual (Laseau, 2000; Lawson, 2005; Tafahomi, 2021a), and graphical features (Ching F. D., 2010; Ching F. D., 2015; Tafahomi, 2009; Tafahomi & Nadi, 2021). However, social distance has affected this interaction in the design studios based on the new model of education during the pandemic (Buldan, 2021).

A design studio is a place where the training of the students takes place through interaction between participants in an open area through a public discussion (Schon, 1987; Garric, 2017). Despite the theoretical classes that sometimes take place in the design studios, the design studio culture has rooted in socialization, interaction, and communication to create collective knowledge (Kim & Ketenci, 2019; Tafahomi, 2021c). However, the normal studio process was affected by the safety measures to mitigate the possible risks in the public areas. Apparently, when the design studio could not or less follow the studio culture, the theoretical topics and presentations based on the social distance could less achieve the educational targets during the pandemic time. For example, an instructor takes place in the design studio to discuss one-by-one and face-to-face with the learners to correct them in the design process through desk critiques. In this respect, the study revealed that the students need the individual process of learning that differs from another student. In fact, the students personalize education processes and procedures based on collective learning and generative knowledge to design their own lessons learnt in educational activities (Kim & Ketenci, 2019). For this reason, the study highlighted that the student's awareness of the learning process and active participation were so important to achieving educational outcomes than methods of education (Avcı & Oruc, 2020).

Nonetheless, the study pointed out the psychological problem of both students and instructors during the pandemic time that resulted in uncertainty about the results and also dissatisfaction with the learning outcomes (Fogarty, 2020; Sangster et al., 2020). Importantly, influences on the students who come with the contextual problems such as family, ethnic, and financial issues the learning process are faced more difficulties (Bayrakdar & Guveli, 2020). In fact, the character of the architecture design studios has based on interactions between the students and instructors in the training process (Schon, 1987). In other words, social and cultural aspects of the design studios have played a fundamental role in the learning outcomes in architecture programs (Shulman, 2005; Lane et al., 2015; Tafahomi, 2021e). However, both physical and personal interaction faced the problem of learning due to the measurement criteria that affected the learning process in both theoretical and practical courses (Tafahomi, 2021c).

In summary, the pandemic was an unprecedented condition in the world that affected all aspects of education, particularly in the courses that were constructed on social interaction. Wearing face masks in classrooms and studios reduced the quality of the voice and communication between the participants. In addition, social distance as an important safety measurement increased the possibility of weaknesses in the interaction and communication between both students and the instructors. Covering the part of the face with a mask and talking through this filter influenced the quality of education and the side effects were discussed by studies although the level has not been determined.

METHOD AND MATERIALS

The methods and materials included methodology, research design, research process, data specifications and sampling, and the context of the study.

Methodology

The studies used both qualitative and quantitative methods to analyze the opinions of the students about the quality of teaching and learning in higher education (Cohen et al., 2007; Johnson & Christensen, 2014; Miller et al., 2004; Silverman, 2010; Creswell, 2012). For qualitative research in education, some techniques have been so common such as structured observation (Cohen et al., 2007; Tafahomi, 2021b), photography (Hemyari et al., 2013; Tafahomi, 2021e; Alerby, 2000), interviews and questionnaires (Ezzy, 2002; Johnson & Christensen, 2014). In addition, the quantitative method was used widely for research through questionnaires and surveys (Frankfort-Nachmias et al., 2014; Creswell & Creswell, 2018) in different styles to discover the opinions of the students about different educational parameters (Lee, 2005; Xi et al., 2017; Yang et al., 2013; Tafahomi, 2021a).

Although the study criticized the Likert scale questionnaire in research (Joshi et al., 2015), Likert scale questionnaires were applied commonly in the studies to discover the opinions of the students about teaching and learning (De Campos et al., 2020; Hartley, 2014; Li, 2013; Huertas-Delgado et al., 2019; Tafahomi, 2021b). In addition, the studies emphasized the interpretation of the results in questionnaires (Neuman, 2006; Santrock, 2011) as part of the content analysis and extracting of the meaning from the text (Krippendorff, 2003; Elo et al., 2014; Moretti et al., 2011).

Research Design

The researcher applied the questionnaire techniques to ask the opinions of the students about the delivery of the courses. The questionnaire was designed based on a five-scaled Likert questionnaire to examine the possible effects of wearing face masks and social distance on the quality of delivery of the theoretical courses. The questionnaire was drawn in two categorical questions including the different modes of the delivery of the theoretical courses based on wearing face masks and social distance such as the clarity of the voice, sentences, and themes, the effectiveness of the stresses and the gestures of the lecturers, structure of the presentation, the question and answers sections. For the satisfaction questions, the questionnaire asked questions about the level of satisfaction of the students importantly about the quality of the courses, quality of the lectures, quality of the performance, and the learning outcomes. It was supposed such kinds of questions could identify the level of the effectiveness of the courses. The draft of the questionnaire was presented to a group of three students to discover if the content of the questionnaire is understandable or not. The feedback of the students about the questions, structure, and arrangement was applied in the questionnaire to make the content clear for the respondents.

Research Process

The research process took place around three months. First of all, the questionnaire was uploaded to Google Forms. All email addresses of the students were collected from the administrative office and were sent an introductory email to explain the objective of the research to ask the students to collaborate in the filling of the questionnaire. However, after three weeks just 43 of 136 students answered the questionnaire. Therefore, the second email was sent after one month to follow up and ask again politely to fill out the questionnaire. After two weeks in the second month, just 87 of the students filled out the questionnaire. Then, the researcher contacted the representative of the years to check the possible solutions for the problem. The representatives mentioned that the students have problems accessing the internet and perhaps they need more time to do the task. In this regard, the time of filling the questionnaire remained open until three months and the students achieved 118 of 136.

Data Specifications and Sampling

The data were extracted from Google Form and converted into an excel file and then to SPSS respectively. The data were combined from 118 students in the department of architecture as participants in the research activity. The online questionnaire included two sections, the opinions of the students about the quality of delivery of the theoretical courses by the lecturers when they used face masks and social distance during the pandemic time, and the level of satisfaction of the students about the activities of the lecturers in the classes

and the self-judgement about the quality of the courses in the learning process. The statistical society included 136 students from the first to fifth years, and the questionnaire was shared through the email addresses of the students. No one was excluded from the research although just 118 students responded to the request for collaboration in the research.

The Context of the Research

The department of architecture is located in Kigali, Rwanda. The department included 136 students from the region that were divided into five years of study in the architecture undergraduate program. Both design studios and theatrical courses take place in the design studios, which are located on the second floor of the school. According to the policy of the country, wearing face masks and social distance were compulsory in public areas such as schools and universities. The country three times practiced lockdowns to control, measure, and reduce the risk of the COVID-19 pandemic. In this regard, the university recommended a blended learning style and an online style for the theoretical courses. However, the practical and hands-on courses importantly architectural design studios remained based on physical activities in the design studios on campus and taking decisions for theoretical courses put on the responsibility of the lecturers to select the mode of the classes, which major part of the lecturers did physical classes based on the request of the students.

The design studios included open spaces with portable drawing tables and chairs for the students. The model of the classes was based on the PowerPoint slides presentation by the lecturers for the theoretical topics, discussion, and questions and answers. All the activities took place in the studios with compulsory face masks and social distance between both lecturers and the students and students with the students. Therefore, the chairs and tables were arranged with social distance to reduce the possibility of any infection in the teaching and learning activities. The total number of students was 136 from the first year to the fifth year including 35, 37, 24, 22, and 18 respectively.

Data Analyses

The results of the Likert questionnaire were inserted in SPSS and all data were sorted based on the ordinal data. Through the Transform Tab, Compute Variables, and Mean, all data were categorized based on the level of satisfaction of the students with the delivery of the theoretical courses in the department of architecture.

Table 1. Mean, Median, and Mode of the questions

| No | Questions on wearing face masks and social distance | Mean | Median | Mode |
|-----|---|------|--------|------|
| Q2 | The clarity of the voice | 3.12 | 3.16 | 3 |
| Q3 | The clarity of the sentences | 3.19 | 3.24 | 3 |
| Q4 | The clarity topics and themes | 3.98 | 4.07 | 4 |
| Q5 | The clarity of the contents | 3.49 | 3.52 | 4 |
| Q6 | The clarity of learning outcomes | 3.35 | 3.44 | 4 |
| Q7 | The quality of the expressions of the instructor | 3.26 | 3.35 | 4 |
| Q8 | The quality of stresses on the topics | 3.22 | 3.25 | 4 |
| Q9 | The quality of gesture and physical activities | 3.49 | 3.54 | 4 |
| Q10 | The quality of graphical presentation | 3.97 | 4.13 | 4 |
| Q11 | The quality and questions and answer parts | 3.50 | 3.55 | 4 |
| Q12 | The lectures delivered the topic effectively | 3.10 | 3.24 | 3 |
| Q13 | The quality of course was sufficient | 2.84 | 2.93 | 3 |
| Q14 | The students performed sufficiently | 2.58 | 2.69 | 3 |
| Q15 | The quality of course satisfied me | 2.73 | 2.80 | 3 |

Table 1 presents the Mean, Median, and Mode of the data. The data demonstrated that the students generally agreed with the questions due to the Likert questionnaire. To evaluate the general relationship between the questions, the research applied the ordinal regression and chi-square tests (Table 2). The results of the ordinal regression of the two categorical factors showed that there was a significant relationship between the quality of the delivery of the theoretical courses and the level of student satisfaction in the department based on the Mean ($X^2 N=1346, df=1260, p=.044$). The overall results rejected the H0 and approved the H1.

Table 2. The Chi-squared table of Mean the theoretical courses and satisfaction of the students

| Title | Value | df | Asymp. Sig. (2-sided) |
|------------------------------|-----------------------|------|-----------------------|
| Pearson Chi-Square | 1346.912 ^a | 1260 | .044 |
| Likelihood Ratio | 475.207 | 1260 | 1.000 |
| Linear-by-Linear Association | 11.815 | 1 | .001 |
| N of Valid Cases | 118 | | |

a. 1334 cells (100.0%) have expected count less than 5. The minimum expected count is .01.

In the detailed analysis, some of the factors were analyzed individually to discover if there were other aspects of the association. Firstly, the satisfaction of the students with the content of the courses was analyzed, second, the performance of the lecturers in the classes was evaluated based on the opinions of the students to see if there was any association.

According to the data, the students expressed that they were satisfied with the quality of the courses. The results of the Chi-square results between the quality of the courses and the topics (X² N=12.247, df=16, p=.727), the content of the courses (X² N=21.298, df=16, p=.167), learning outcomes (X² N=29.756, df=16, p=.019), and questions and answers activity (X² N=17.613, df=16, p=.347) illustrated that just one item statistically associated with the level of satisfaction of the students about the quality of the courses. Therefore, except for one factor, other factors did not show a statistical association with the satisfaction of the students with the course. Therefore, except for one item, the results rejected the H1 and approved the H0.

For the second aspect of the analysis, the results of the student's evaluation and the quality of the delivery of the theoretical courses by the lecturers were analyzed through a chi-square test. The results of the Chi-square test illustrated that relationships between the quality of the lecturers' deliverables and topics (X² N=13.170, df=12, p=.357), the content of the courses (X² N=23.566, df=12, p=.023), learning outcomes (X² N=20.144, df=12, p=.064), and questions and answers (X² N=35.745, df=12, p=.000). According to the results, there were two items associated with the quality of the lecturers' activities importantly the learning outcomes and questions and answers items. However the topic and content of the theoretical courses did not show any statistical association with the evaluation of the students.

The quality of voice, sentences, expressions and stresses on the presentation in the theoretical courses were analyzed to evaluate the influences of the face masks and social distance factors on the delivery of the courses. The results of the chi-square test presented two associations between the quality of voices (X² N=21.589, df=12, p=.042) and the clarity of the sentences (X² N=29.773, df=12, p=.003). Other factors did not statistically associate with the quality of the lecturers' deliverables and the style of presentation such as expressions, gestures, and stress on the topics. In addition, just stresses on the topic was associated with the quality of the theoretical courses (X² N=31.544, df=16, p=.011); however, other factors did not associate with the quality of the courses such as quality of voice, clarity of the sentences, the moods of expressions, gestures. Therefore, just for those associated items, H1 was approved and H0 was reject.

FINDINGS

The finding of the research identifies that the students satisfy with the quality of the delivery of the theoretical courses by wearing face masks and social distance during the pandemic time. The students highlight that there are more satisfied with the job of the lecturers than the learning outcomes in the program. However, the detailed examination of the results highlights some contradictions in the answers of the respondents.

Chi-square tests identified there are a few numbers of associations between the opinions of the students and the level of satisfaction. Apparently, the students applied other factors in the evaluation such as content, learning outcomes, and questions and answers activities in the studios. The results do reveal that the students assumed the quality of the theoretical courses equally with the activities of the lecturers in the delivery of the contents of the courses. In the other words, the results could present an overall satisfaction of the students

about the program because other practical courses also are presented by the same instructor in the design studios.

The quality of the voice and sentences in the theoretical courses are associated with the quality of the delivery of the courses by the lecturers. Factors show that using face masks and social distance in theoretical classes does not affect the quality of teaching and learning. However, the students did not select other factors that are more obvious in the list of the association in the chi-square test such as the gestures of the lecturers, graphical presentation, and the content of the courses. Seemingly, the title of the questionnaire based on an evaluation of the effects of wearing face masks and social distance on teaching and learning led the students toward giving positive marks to those factors.

There are differentiations between the opinions of the students about the theoretical courses delivered by the lecturers and the quality of the courses they did participate in. This contradiction highlights one of the important factors in the questionnaire based on the acceptance of the level of the delivery of the courses during the pandemic time. In fact, although the general Mean of the data presents an association between the quality of the theoretical courses during the pandemic time and the level of satisfaction of the students, seemingly, the students attempt to accept the level of the quality of the activities in the department due to the different circumstances in the time and location.

In other words, the students are satisfied with the learning outcomes, questions and answers, and content of the courses. The students generally are satisfied with both the lecturers' activities and delivery of the theoretical courses in wearing face masks and social distance. However, the detailed factors do not show any relation between the evaluation of the students and satisfaction with the quality of the delivery of the theoretical courses importantly graphical presentation, themes and topics, and gesture and physical activities. This finding underlines that the students attempt to support the lecturers and department with the positive response to the questions.

DISCUSSION

Wearing face masks and social distance were two important safety measurements in the instruction of educational institutes such as the University of Rwanda. Despite the many studies on the problem of wearing face masks in classrooms such as limited observation of the face of lectures (Will, 2020), the health problem of both students and instructors (McKeever, 2022), and the quality of voice (O'Hagan et al., 2022), the students did not face difficulties in the theoretical classes. The students responded to the quality of the delivery of the courses positively due to the other factors such as topics, presentation, and positive sense of the activity.

The structure of the design studio was constructed based on social interaction, discussion, and communication (Schon, 1987; Franz, 1994; Lawson, 2005; Tafahomi, 2021a). In this process, the instructors applied physical, graphical, and conceptual activities (Ching F. D., 2010; Ching F. D., 2015; Tafahomi & Nadi, 2021) to deliver the educational content and material. Although the results of the studies referred to the new model of education in architecture (Buldan, 2021) based on distance learning (Ersin et al., 2020), blended learning (Delialioglu & Yildirim, 2007; Gülbahar & Madran, 2009), and practical activities (Tafahomi, 2021d), the students continued to apply the same structure in the theoretical courses such as interaction, communication, and discussion with some limitation that did not affect the whole process. For this reason, the students were satisfied with the delivery of the courses in the studio.

Both wearing face masks and social distance were the problem of architecture education in the delivery of the courses. However, the chi-square test identified that the students were satisfied with the quality of the delivery of the theoretical courses based on the Mean although the detailed Chi-square did not highlight associations. This achievement could underline that the quantitative method could less reveal the results as mentioned in the literature in terms of the contradictive answering to the questionnaire by students (Avci & Oruc, 2020).

The uncertainty in educational context, method, and model influenced the attitude of the students to answer the questionnaire. The literature highlighted the limitation of educational material (Apriyanti, 2020), physical interaction (Tafahomi, 2021c), and the model of education (Holdheide, 2020). However, the results of the questionnaire did not demonstrate an association between the teaching models and the level of satisfaction

of the students which referred to the role of instructors in the process as it was mentioned by Morgan and Shackelford (Morgan & Shackelford, 2018).

CONCLUSION

The students do evaluate educational outputs with a holistic approach. It means the students perceive the results of teaching and learning through different lenses that take place in the context of educational institutes. Therefore, although the detailed questions do not reveal a statistical association with the level of satisfaction of the students, the students generally accept the quality of the delivery of the courses due to the pandemic time. Apparently, asking any detailed questions is influenced by other factors in the context. Therefore, the students interact with the questions in a positive mode to some extent to express their understanding of the pandemic due to the learning outcomes of the courses. Seemingly, the positive opinion of the students to the activities of the lectures in the theatrical classes and methods of the delivery of the courses illustrate respect than a critical point of view.

In addition, the Chi-Square analysis reveals a few factors is associated with the positive sense of the students about the outputs of the educational outcomes and the performance of the lecturers in the theoretical courses. In fact, despite the many effective factors in the list of selection for the students, the answers of the students do less illustrate a strong connection between the effective factors and the delivery of the courses. Apparently, the Likert questionnaire and the quantitative analysis demonstrate this gap between the general opinions of the students and detailed aspects of the questions through the chi-square test. Seemingly, the students attempt to support the activities of the lecturers during the pandemic times through their answers to the questionnaire similar to the trends in the educational institute for demonstrating a successful achievement during the pandemic time.

Recommendations

The quality of the acoustic is less designed for the theoretical courses based on wearing face masks in most design studios, seemingly, the sound systems such as microphones, speakers and recording devices could improve the quality of presentation by the lecturers. Importantly, video recording of the presentations could create an active archive for the students to review the content to effective comprehension of the theoretical courses.

Project-based activities are another option that despite application in the design studios, instructors prefer to apply just in the design projects in other courses. This logic is constructed based on one project each semester and only in studios. Therefore, courses run as paper exams or as part of the design studios. Nonetheless, the students could accomplish parallel projects with different topics and scales that make more effective self-learning during the pandemic time.

The students would be introduced to the differentiation between the lecturers' activities and learning outcomes due to the content of the curriculum. It is the duty of the department to inform the students about learning expectations in every course.

While architecture programs are introduced in terms of discipline and learning by doing, the pandemic made clear that all departments need to convert some of the courses to the blended learning mode to be more flexible in any unexpected condition.

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