

AWARENESS ON DIGITAL EDUCATIONAL TOOLS FOR VIRTUAL TEACHING AND INTERACTIVE LEARNING - A QUESTIONNAIRE SURVEY

L.Sai Charan¹, Dr.Keerthi Sasanka², Dr. V. Vishnu Priya³

¹Saveetha Dental College & Hospitals, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai - 600 077

²Department of Prosthodontics Saveetha Dental College & Hospitals, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai - 600 077.

³Department of Biochemistry, Saveetha Dental College & Hospitals, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai - 600 077.

¹151801026.sdc@saveetha.com

²keerthis.sdc@saveetha.com

³vishnupriya@saveetha.com

ABSTRACT

Online tools refers to any program, app, or technology that can be used via an internet connection and hence teachers ability to present information. The paper examines the usefulness of the internet as a tool for interactive learning, teaching and research. It further exhibits the level of satisfaction of students and their perception towards online tools and online classes. Survey research method was employed. Questionnaire was the main instrument utilised for data collection. The findings of the study shows that most of the students are pretty much satisfied with present online tools, but still there is a need for a bit of improvement. The aim of this study was about enhancing the quality of learning and teaching. Meet the learning style or needs of students, improve user accessibility and time flexibility to engage learners in the online learning process. A study was carried out by using multiple-choice structured questionnaire among 114 students, the questionnaire was prepared in such a way that we can assess the attitude, their perception and awareness towards online tools and online classes. The data was collected and statistically analysed. Results showed that within the limitations of the study, most of the students are pretty much satisfied with the present online tools and online classes but still definitely there is a need of improvement of online classes and the interaction between students and the teacher. Our findings of the study proved that majority of the students are satisfied with the present online tools for teaching and learning, but they're expecting improvisation in future.

KEYWORDS: Interactive Learning, online classes, online survey, online tools, teaching and learning

INTRODUCTION

There is an already recognised fact that the need for education experience is rapidly growing, development of technology is rapidly changing the face of education to which, teaching, research and learning or taking new dimensions. Therefore the flexibility provided by the internet technology becomes especially important. Ar Shyam stated that in its capacity as a tool, the internet is but a ripple on the surface of our educational institutions. In its capacity as an intellectual challenge, it is without precedent in education, particularly using it well is a recognised fact. A wealth of resources and techniques now exist which serve as a source both for educating examples of new teaching practices, as well as easily accessible mothers for adoptions into various formats of teaching, research and learning internet technology allows teacher and students to keep up with

their minds. It lets them try their ideas as soon as they come up with them, similarly the internet provides learning, teaching and research which involves interactions, either with students, teachers, the environment, or the learning material, in online learning, interactions are often but not always involving multimedia. Many educational institutions began to use the web as a new medium to assist the teaching, research and learning activities. According to a survey conducted by market data retrieval, in Shelton, con.2000 colleges, 72% of online courses in 1999–2000, compared with 48% in 1998–1999. Today's students are digital natives and make increasing use of web 2.0 technologies in their daily lives. Web 1.1 was red. Only where internet users went online to find information. It was similar to going to the library to find books. Web 2.0 tools can be used to teach curriculum content, store data, etc. Web tools were clearly explained in the study done by Chantal Roddy in 2017. The present research interest has been developed from previous studies, where the investigators involved in studies which were done based on Surveys (Ashok *e t al.*, 2014; Venugopalan *e t al.*, 2014; Jyothi *e t al.*, 2017; Basha, Ganapathy and Venugopalan, 2018)

MATERIALS AND METHODS

The present study was a cross-sectional survey, conducted online through docs.google.com. The study protocol was approved by Saveetha Dental college review board in Chennai. The study was conducted among students from various places in India. A list of 150 email IDs were collected to which the links of the online questionnaire were sent. Some articles were studied for references and searched in Pubmed, Mesh, Pmc(Ariga *e t al.*, 2018) (Selvan and Ganapathy, 2016; Ariga *e t al.*, 2018) (Kara, 2014; Subasree, Murthykumar and Dhanraj, 2016) (Vijayalakshmi and Ganapathy, 2016) (Ganapathy, Kannan and Venugopalan, 2017) (Ganapathy, Kannan and Venugopalan, 2017; Kannan and Venugopalan, 2018) A self structured questionnaire consisting nine close ended questions was prepared. It was prepared in such a way that we can know the attitude, knowledge, and perception about online classes and the tools used in it. The questionnaire was uploaded in the Google docs. The web link was sent to 150 members, out of which 114 students responded. The responses were collected, compiled and tabulated. In MS Excel sheet. The data was then subjected to statistical analysis at 5% significance level [$p < 0.05$] using SPSS-16(Duraisamy *e t al.*, 2019) (Ganapathy *e t al.*, 2016) (Jain, Ranganathan and Ganapathy, 2017) (Ashok and Suvitha, 2016) (Ajay *e t al.*, 2017) to use Pearson's Chi-Square test and Kruskal wallis test

RESULTS AND DISCUSSION

Out of 150 students approached, 114 responded and these 114 responses are analysed. In our study, 80.7% preferred video classes (Fig 1), when compared to study done by Dutton Y (Dutton and Ryznar, no date), more percentage of respondents prefer video classes in this study. 60.5% agreed that quiz plays an important role in online classes (Fig-2), when compared to study done by Rubin B (Rubin, 2013) more percentage of students agreed in our study, 73.7% think that online classes show the same effect on academic performance as the normal classes (Fig-3). More percentage of students agreed to this than in the study done by Taylor H (Taylor, 2014). 72.8% agreed that Online lectures help them to understand the concepts (Fig-4). More percentage of respondents had agreed to this than in the study done by Darby F (Taylor, 2014; Darby and Lang, 2019). 73.7% of respondents think that online classes can be developed, and can be more interactive (Fig-5). Development of interactivity in online classes helps students to gain more knowledge. 78.9% students think that interaction of students and teachers can be improved in online classes (Fig-6). 79.8% students think that using online tools affect eyesight (Fig-7). 57% students think that online classes are less productive and compared with normal classes (Fig-8). Less percentage of students think that online

classes are less productive than in the study done by Brown D(Brown, 2017). 73.7 % think that online classes can be developed and can be more interactive(Fig-9).

A comparison between the students of different years of study and the opinion on picture quiz playing an important role in online classes(Fig-10).The analysis of chi square shows that all the students in different years of study agreed that picture quiz play a very important role in online teaching(p-value >0.05).Comparison between the students and opinion about online classes showing same effect as traditional classes(Fig-11).The analysis of chi square shows that all the students in different years of study agreed that online classes shows same effect as traditional classes(p-value>0.05).Comparison between the students and opinion about online classes are more productive than traditional classes(Fig-12).The analysis of chi square shows that all the students in different years of study agreed that online classes are productive than traditional classes(p-value>0.05).

Online education is here and is highly likely to stay and grow. The review of its history clearly shows online education has developed rapidly, fuelled by internet connectivity, advanced technology and a massive market. It has devolved from 19th century correspondence programmes to the 21st-century vibrant and well-designed institutional online offerings. We can well anticipate the online classes will continue to increase its presence and influence higher education through a rigorous process of reshaping, refining and reconstructing. This unlikely, however, to replace traditional higher education but merely to be an alternative. But owing to its flexibility, accessibility and affordability, online education is gaining in popularity, especially for people who are otherwise unable to obtain education because of physical distance, schedule conflicts, and affordable cost.

CONCLUSION

From the results of our study we conclude that most of the students are aware of digital educational tools for virtual teaching and interactive learning. Also, the students of different years of the study know the importance of quizzes in online classes,productivity of online classes and the effect of online classes like traditional classes. So, online classes can be expected to become more advanced and interactive which makes the teaching and learning process easier.

AUTHOR CONTRIBUTIONS

Author 1 (Sai Charan), carried out the study by collecting data and drafted the manuscript after performing the necessary statistical analysis.

Author 2 (Dr. L. Keerthi Sasanka) aided in conception of the topic, has participated in the study design, statistical analysis and has supervised in preparation of the manuscript.

Author 3 (Dr.VishnuPriya) has participated in the study design and has coordinated in developing the manuscript. All the authors have discussed the results among themselves and contributed to the final manuscript.

ACKNOWLEDGEMENT

This research was done under the supervision of the Department of Research of Saveetha Dental College and Hospitals. We sincerely show gratitude to the corresponding guides who provided insight and expertise that greatly assisted the research.

CONFLICTS OF INTEREST

None declared

REFERENCES

- [1] Ajay, R. et al. (2017) 'Effect of surface modifications on the retention of cement-retained implant crowns under fatigue loads: An In vitro study', *Journal of Pharmacy And Bioallied Sciences*, p. 154. doi: 10.4103/jpbs.jpbs_146_17.
- [2] Ariga, P. et al. (2018) 'Determination of Correlation of Width of Maxillary Anterior Teeth using Extraoral and Intraoral Factors in Indian Population: A Systematic Review', *World Journal of Dentistry*, pp. 68–75. doi: 10.5005/jp-journals-10015-1509.
- [3] Ashok, V. et al. (2014) 'Lip Bumper Prosthesis for an Acromegaly Patient: A Clinical Report', *The Journal of Indian Prosthodontic Society*, pp. 279–282. doi: 10.1007/s13191-013-0339-6.
- [4] Ashok, V. and Suvitha, S. (2016) 'Awareness of all ceramic restoration in rural population', *Research Journal of Pharmacy and Technology*, p. 1691. doi: 10.5958/0974-360x.2016.00340.1.
- [5] Basha, F. Y. S., Ganapathy, D. and Venugopalan, S. (2018) 'Oral Hygiene Status among Pregnant Women', *Research Journal of Pharmacy and Technology*, p. 3099. doi: 10.5958/0974-360x.2018.00569.3.
- [6] Brown, D. (2017) 'Inflectional classes and containment', *Oxford Scholarship Online*. doi: 10.1093/oso/9780198712329.003.0004.
- [7] Darby, F. and Lang, J. M. (2019) *Small Teaching Online: Applying Learning Science in Online Classes*. John Wiley & Sons. Available at: <https://play.google.com/store/books/details?id=83yaDwAAQBAJ>.
- [8] Duraisamy, R. et al. (2019) 'Compatibility of Nonoriginal Abutments With Implants: Evaluation of Microgap at the Implant-Abutment Interface, With Original and Nonoriginal Abutments', *Implant dentistry*, 28(3), pp. 289–295. doi: 10.1097/ID.0000000000000885.
- [9] Dutton, Y. and Ryznar, M. (no date) 'Assessing Online Learning in Law Schools: Students Say Online Classes Deliver'. doi: 10.31228/osf.io/bm8s5.
- [10] Ganapathy, D. et al. (2016) 'Effect of Resin Bonded Luting Agents Influencing Marginal Discrepancy in All Ceramic Complete Veneer Crowns', *Journal of clinical and diagnostic research: JCDR*, 10(12), pp. ZC67–ZC70. doi: 10.7860/JCDR/2016/21447.9028.
- [11] Ganapathy, D. M., Kannan, A. and Venugopalan, S. (2017) 'Effect of Coated Surfaces influencing Screw Loosening in Implants: A Systematic Review and Meta-analysis', *World Journal of Dentistry*, pp. 496–502. doi: 10.5005/jp-journals-10015-1493.
- [12] Jain, A., Ranganathan, H. and Ganapathy, D. (2017) 'Cervical and incisal marginal discrepancy in ceramic laminate veneering materials: A SEM analysis', *Contemporary Clinical Dentistry*, p. 272. doi: 10.4103/ccd.ccd_156_17.
- [13] Jyothi, S. et al. (2017) 'Periodontal Health Status of Three Different Groups Wearing Temporary Partial Denture', *Research Journal of Pharmacy and Technology*, p. 4339. doi: 10.5958/0974-360x.2017.00795.8.
- [14] Kannan, A. and Venugopalan, S. (2018) 'A systematic review on the effect of use of impregnated retraction cords on gingiva', *Research Journal of Pharmacy and Technology*, p. 2121. doi: 10.5958/0974-360x.2018.00393.1.
- [15] Kara, S. A. M. (2014) 'The Effect of Mouth Care with Aloe Vera Solution on Mucositis: Treatment in Patients with Chronic Obstructive Pulmonary Disease (COPD)', *Journal of Oral Hygiene & Health*. doi: 10.4172/2332-0702.1000168.
- [16] Rubin, B. (2013) 'MEASURING THE COMMUNITY IN ONLINE CLASSES', *Online Learning*. doi: 10.24059/olj.v17i3.344.

[17] Selvan, S. R. and Ganapathy, D. (2016) 'Efficacy of fifth generation cephalosporins against methicillin-resistant *Staphylococcus aureus*-A review', *Research Journal of Pharmacy and Technology*, p. 1815. doi: 10.5958/0974-360x.2016.00369.3.

[18] Subasree, S., Murthykumar, K. and Dhanraj (2016) 'Effect of Aloe Vera in Oral Health-A Review', *Research Journal of Pharmacy and Technology*, p. 609. doi: 10.5958/0974-360x.2016.00116.5.

[19] Taylor, H. (2014) 'Engaging psychology students in online classes', *PsycEXTRA Dataset*. doi: 10.1037/e577852014-003.

[20] Venugopalan, S. et al. (2014) 'Magnetically retained silicone facial prosthesis', *Nigerian journal of clinical practice*, 17(2), pp. 260-264. doi: 10.4103/1119-3077.127575.

[21] Vijayalakshmi, B. and Ganapathy, D. (2016) 'Medical management of cellulitis', *Research Journal of Pharmacy and Technology*, p. 2067. doi: 10.5958/0974-360x.2016.00422.4.

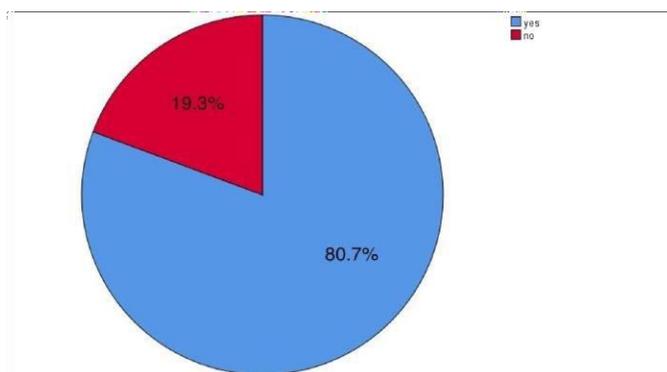


Figure 1 Pie chart showing frequency distribution of responses about preference of video classes, Majority of the respondents (80.7%) reported yes. Blue represents yes and red represents no.

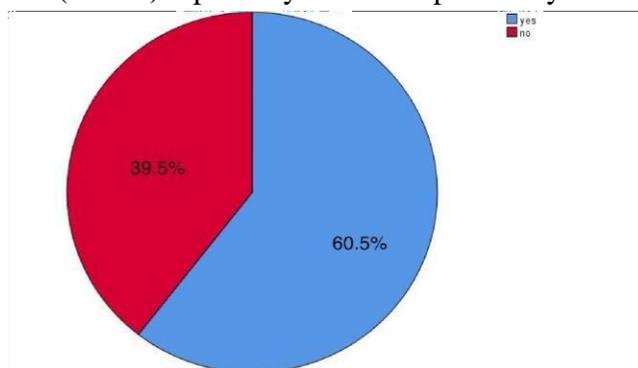


Figure 2 Pie chart showing frequency distribution for responses about picture quiz plays a very important role in online teaching, Majority of the respondents (60.5%) reported yes. Blue represents yes and red represents no.

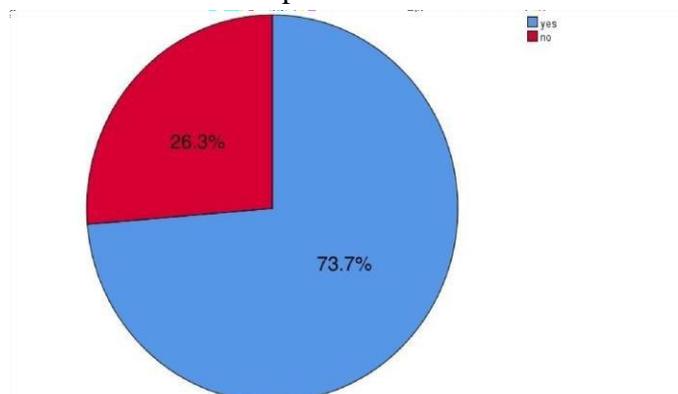


Figure 3 Pie chart showing frequency distribution of responses for online classes show the same effect on the academic performance as traditional classes, Majority of the respondents (73.7%) reported yes. Blue represents yes and red represents no.

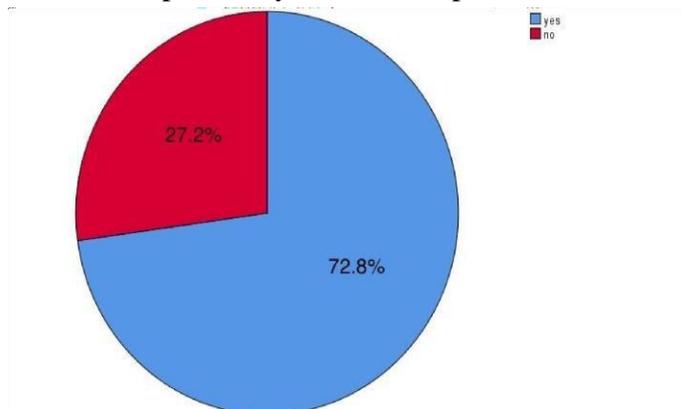


Figure 4 Pie chart showing frequency distribution of responses about online lectures help you to understand the concepts, Majority of the respondents (72.8%) reported yes. Blue represents yes and red represents no.

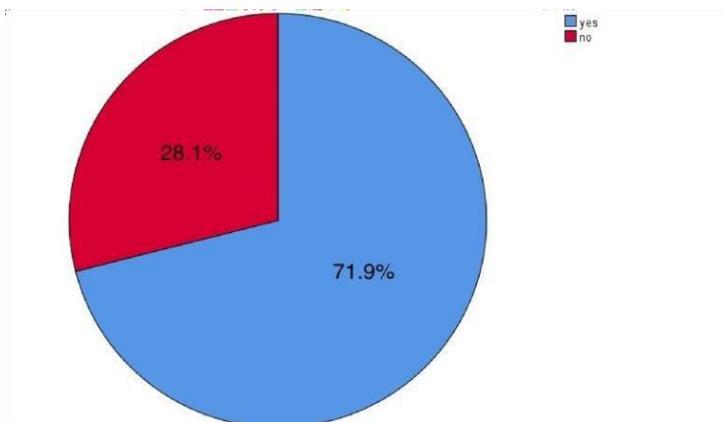


Figure 5 Pie chart showing frequency distribution of responses about the awareness of Ednodo, which is a new teaching tool, Majority of the respondents (71.9%) reported yes. Blue represents yes and red represents no.

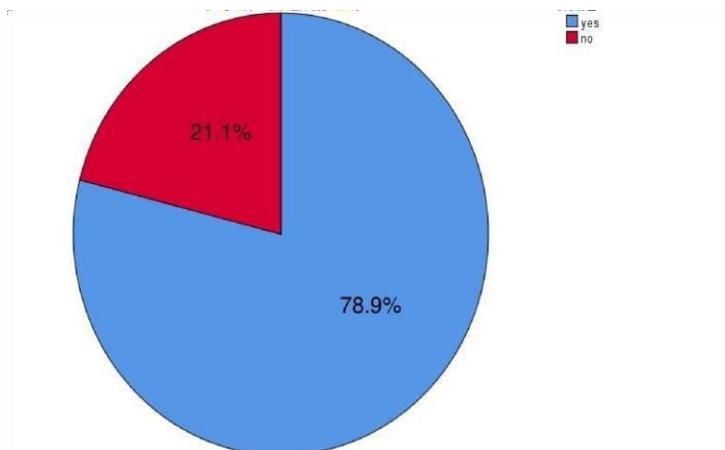


Figure 6: Pie chart showing frequency distribution of responses about tools for improving student and teacher interaction can be developed, Majority of the respondents (78.9%) reported yes. Blue represents yes and red represents no.

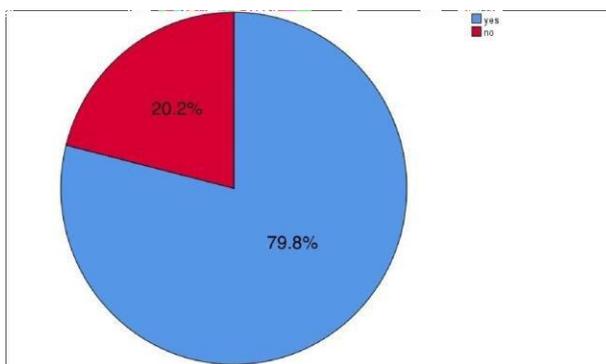


Figure 7 : Pie chart showing frequency distribution of responses about using these online tools, would affect their eyesight, Majority of the respondents (79.8%) reported yes. Blue represents yes and red represents no.

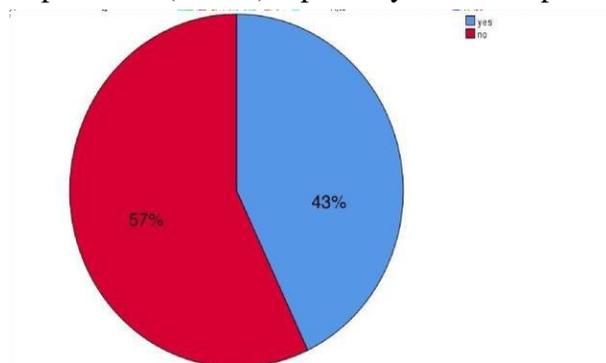


Figure 8: Pie chart showing frequency distribution of responses for online classes are more productive than the regular classes, Majority of the respondents (57%) reported no. Blue represents yes and red represents no.

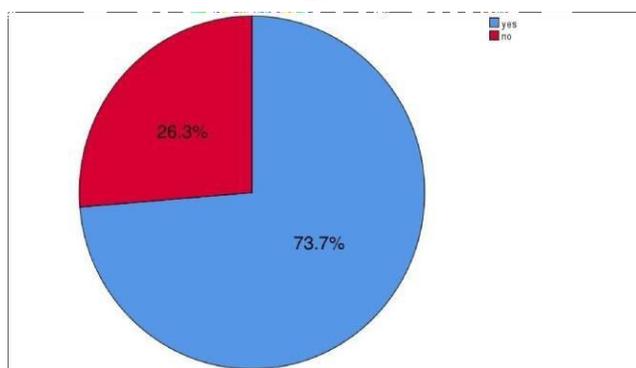


Figure 9 : Pie chart showing frequency distribution of responses for online classes show the same effect on academic performance as the traditional classes, Majority of the respondents (73.7%) reported no. Blue represents yes and red represents no.

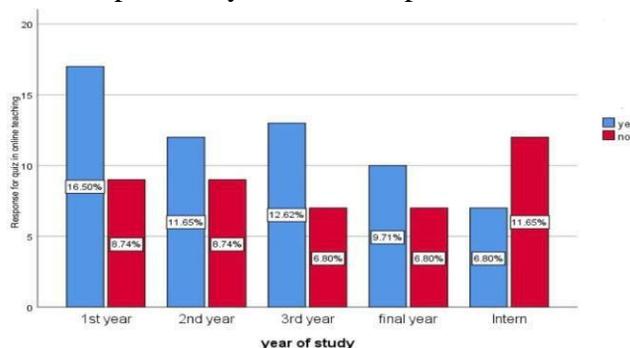


Figure 10: Depicts the bar chart showing association between the students based on the year of study with picture quizzes playing a very important role in online teaching. X axis represents year of study and Y axis

represents the responses for the role of quiz in online teaching. Blue colour represents yes and red colour represents no. Higher number of 1st years (16.50%) reported that picture quiz played an important role in online teaching. (Chi square test value:2.624 DF:6 , p value: 0.248 (>0.05) indicating statistically not significant. This figure shows that all the students in different year of study agreed that picture quizzes playing a very important role in online teaching.

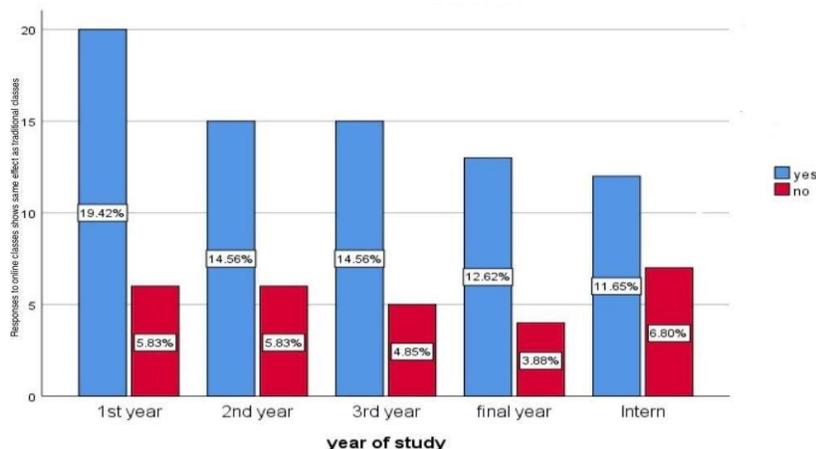


Figure 11: Depicts the bar chart showing association between the students' responses based on the year of study with online classes having the same effect on academic performance than the normal classes. Higher number of 1st years (19.42%) reported yes. X axis represents year of study and Y axis represents the responses for effect on academic performance. Blue colour represents yes and red colour represents no. (Chi square test value:20.903 DF:2, p value:0.6942(>0.05) indicating statistically not significant. This bar graph shows that students in different year of study gave similar opinion on online classes effect on academic performance.

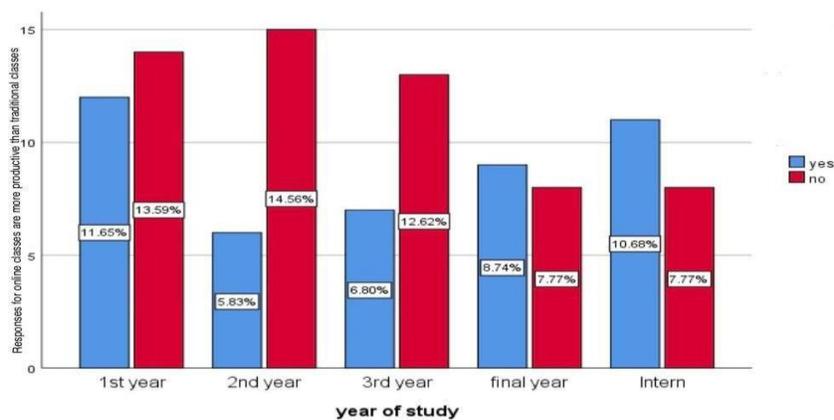


Figure 12 depicts the bar chart showing association between the students' responses based on the year of study with the online classes being more productive than the traditional classes.. X axis represents the year of study and Y axis represents the responses for productivity through online classes. Blue colour represents yes and red colour represents no. Higher number of 2nd years (14.56%) reported no. (Chi square test value:18.257, DF:5, p value:0.753(>0.05) indicating statistically not significant. There are similar responses between the students in different years of study on being productive in academic performance.