

PSYCHOLOGICAL STATUS OF ONLINE EDUCATION AMONG DENTAL COLLEGE STUDENTS

ABSTRACT

E-learning has become an essential method and implemented by educational institutions across the world. Physiological change of online education among college students, based on a questionnaire or a Google form. Age among 21 to 25 where more knowledge about online education. Time spent for online classes per day is more than 6 hrs. The effectiveness of online classes varies among age groups. To make awareness about online education. A self structured questionnaire is being prepared and uploaded in Google forms. Increased implementation of technology will increase students' comprehension of content and skill developed. Asynchronous delivery is threaded discussions, e-mail and telephone calls. Education institutions created to deliver knowledge have yet to adopt technology for this purpose. Learning comparison has now been introduced in school. Online education experience is typically asynchronous and also incorporates synchronous elements. Increased implementation of technology will increase students' comprehension of content and skill developed. The study showed that the people who are aged between 21 to 25 are more aware of online education. The p- value of this study is found to be 0.002, ($p < 0.05$), hence statistically significant. The aim of the study is to rule out the physiological changes of online education among the college students.

Keywords: E-learning, educational institutions, online education, Questionnaire

INTRODUCTION

Online class was electronically supported. There are numerous benefits to online education, including improved time management, increased self-motivation, new technical skills, professional progress and interests, a flexible schedule, and a wider range of causes to choose from ((1). Even Though it has advantages, some disadvantages also present like the direct interaction among students and teachers were reduced (2). During COVID period online education was a backbone for schools and colleges (3). Online education if used effectively allows students and teachers to mutually engage and collaborate. Technology acceptance model was based on cognitive theories that explain that process of adopting a behavior (4). Online education helps students become independent, proficient members and researchers. The previous studies reveal the positive impact of enhancing the achievement and performance of students (5). The transfer of knowledge becomes easy and convenient and also effective. The use of the internet allows students to find amazing convenience and other kinds of assisting material (6). Teachers adapting to the new lifestyle must find methods of incorporation and utilize their new form of online education(7–9), (10–15). Classroom has the benefit of increased academic achievement (16). Increased implementation of technology will increase students' comprehension of content and skill developed. Students achieve online learning self efficacy based on previous experience with technology (17). Online education is useful telecommunication technology to deliver the knowledge and fulfill the requirement for learning in moderat society (16,18). Online education has now been recognized to have eased our learning process. The general consensus on children are most easily distracted (16,18,19). This research is needed to make the college student to be more aware about online education (20). People wish to take online courses for their learning and certification. Online education acceptance model was based on cognitive theories that revealed the process of adopting a behaviour (20,21). Education institutions created to deliver knowledge have yet to adopt technology for this purpose. Learning comparison has now been introduced in school (20). It will be a more advanced level of learning. Asynchronous learning environments are described as an online world where work is supported through the use of digital platforms in such a way that participants are not required to be online at the same time (21). Asynchronous delivery are threaded discussions, e-mail and telephone calls. This gives meaning to the anytime-anywhere appeal of online learning. (22)Advantage of asynchronous learning is the learner having more time to generate content related responses to the instructor and peer postings (23). The aim of the study is to rule out the physiological changes of online education among the college students.

MATERIALS AND METHODS

A cross-sectional survey was conducted among the college students population with a sample size of 102. A self administered structured questionnaire was prepared based on visual pollution and consisted of 15 questions. It was circulated to participants through an online platform (google form). The statistics were done using SPSS software, chi-square test was used to check the association and P value of 0.05 was said to be statistically significant. The pros of the survey is that the College students of different lifestyles and cultures were surveyed . Simple random sampling method was the sampling method used to minimise the sampling bias. The inclusion criteria for the study is, studies published for the last 12 years, content directly relevant to dental students, cross sectional studies investigating changes over years. The exclusion criteria for the study includes, content relevant to other disciplines, not concerned with the field of dentistry, and reports of non original research.

RESULTS AND DISCUSSION

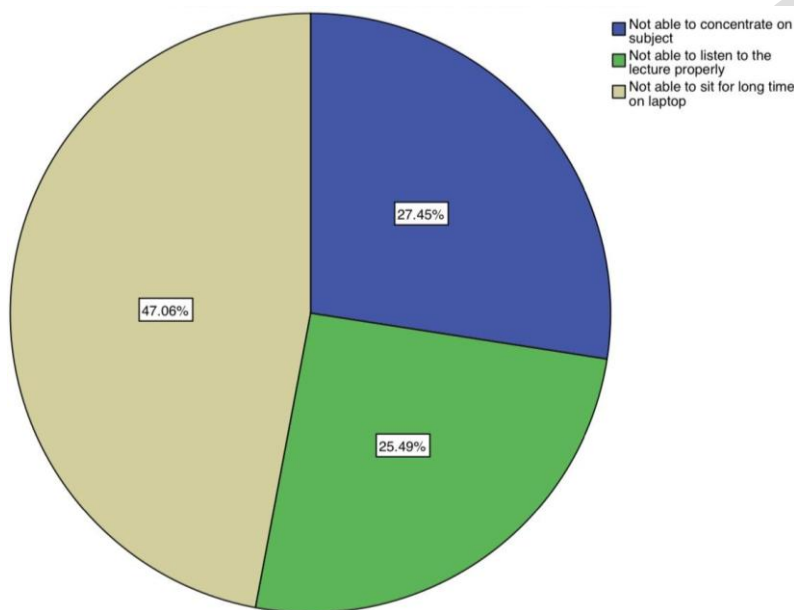


FIGURE 1 Pie chart showing the percentage distribution of problems faced during online classes among college students. Whereas, beige colour represents not being able to sit for a long time on laptop (47.06%), blue colour represent not able to concentrate on subject (27.45%), green colour represent not able to listen to the lecture properly (25.49%) .

FIGURE 2 Pie chart showing the percentage distribution about online teaching is helpful or not. Wherein, green represents yes(86.27%) and blue colour represents no(13.73%).

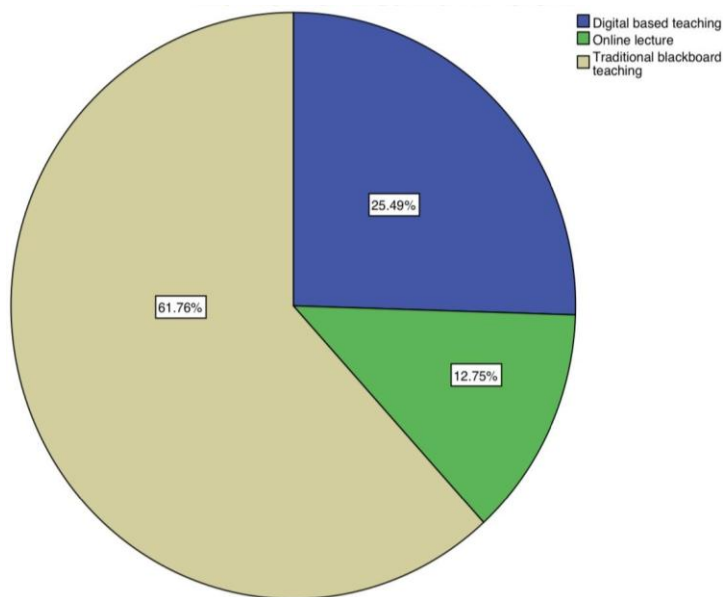


FIGURE 3 Pie chart showing the percentage distribution about the best mode of education in future. Whereas, beige colour represents traditional blackboard teaching (61.76%), blue colour represents digital based teaching(25.49%) and green colour represents online lecture (12.75%).

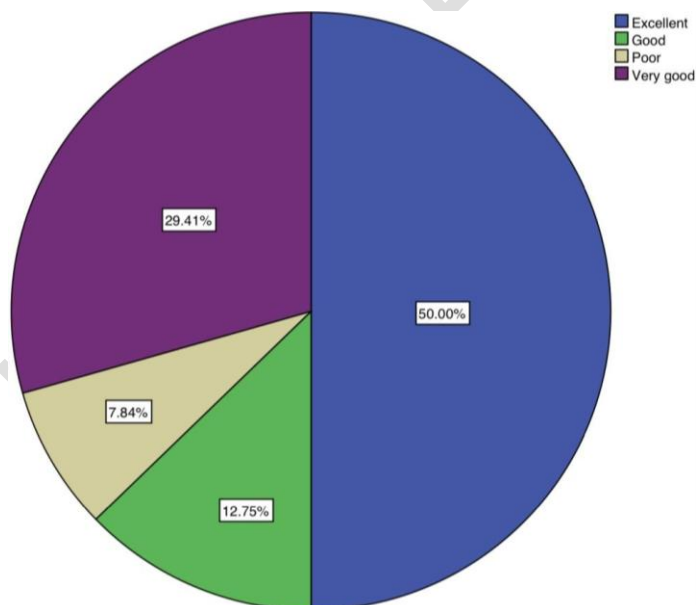


FIGURE 4 Pie chart showing the percentage distribution about opinion about overall online education. Whereas blue represents excellent (50.00%), violet colour represent very good (29.41%), green colour represent good (12.75%) and beige colour represent poor (7.84%).

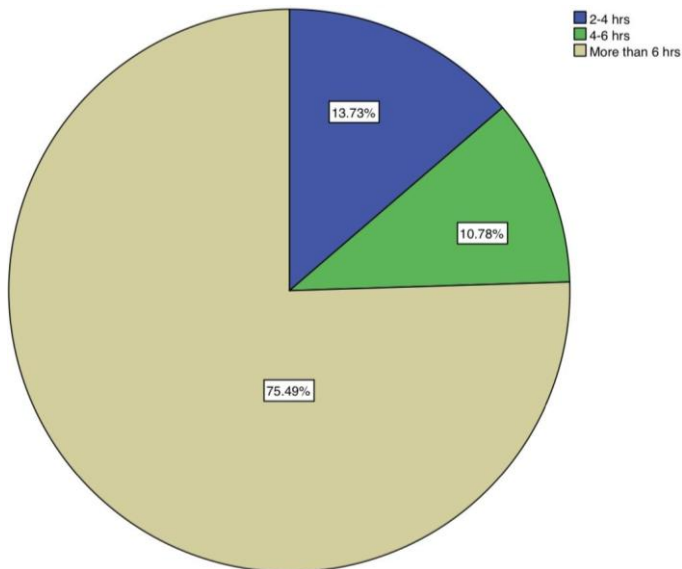


FIGURE 5: pie chart showing the percentage distribution about duration of online classes per day. Whereas, beige represent more than 6 hrs (75.49%), blue colour represent 2 to 4 hrs (13.73%) and green colour represent 4 to 6 hrs (10.78%).

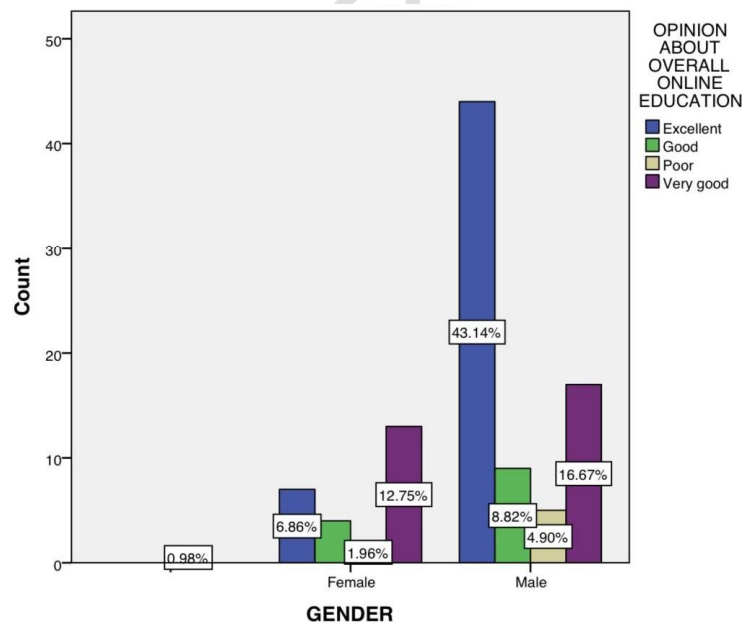


FIGURE 6 Bar graph showing association between opinion about overall online education and gender. X-axis represents gender and Y-axis represents opinion about overall online education. 43.14% of male responded excellently. 12.75% of females responded very well. Blue colour represents excellent, green colour represents good, violet colour represents very colour, beige colour represents poor. Chi-square test was done and association was found to be statistically significant. chi square value: 20.861 and p- value: 0.002,($p < 0.05$). Hence statistically significant.

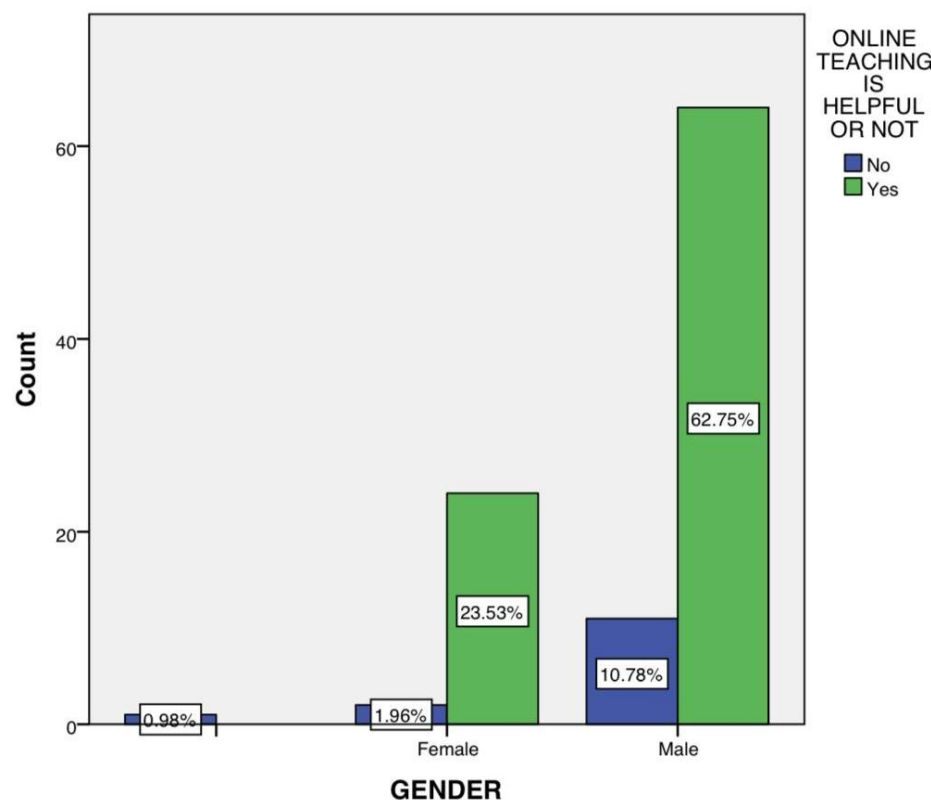


FIGURE 7 Bar graph showing association between gender and online teaching is helpful or not. X-axis represents gender and Y-axis represents whether online teaching is helpful or not. 62.75% of male responded yes and 23.53% of females responded yes. Green colour represents yes and blue colour represents no. Chi-square test was done and association was found to be statistically not significant. Chi square value: 7.141 and p-value: 0.028, ($p > 0.05$). Hence statistically not significant.

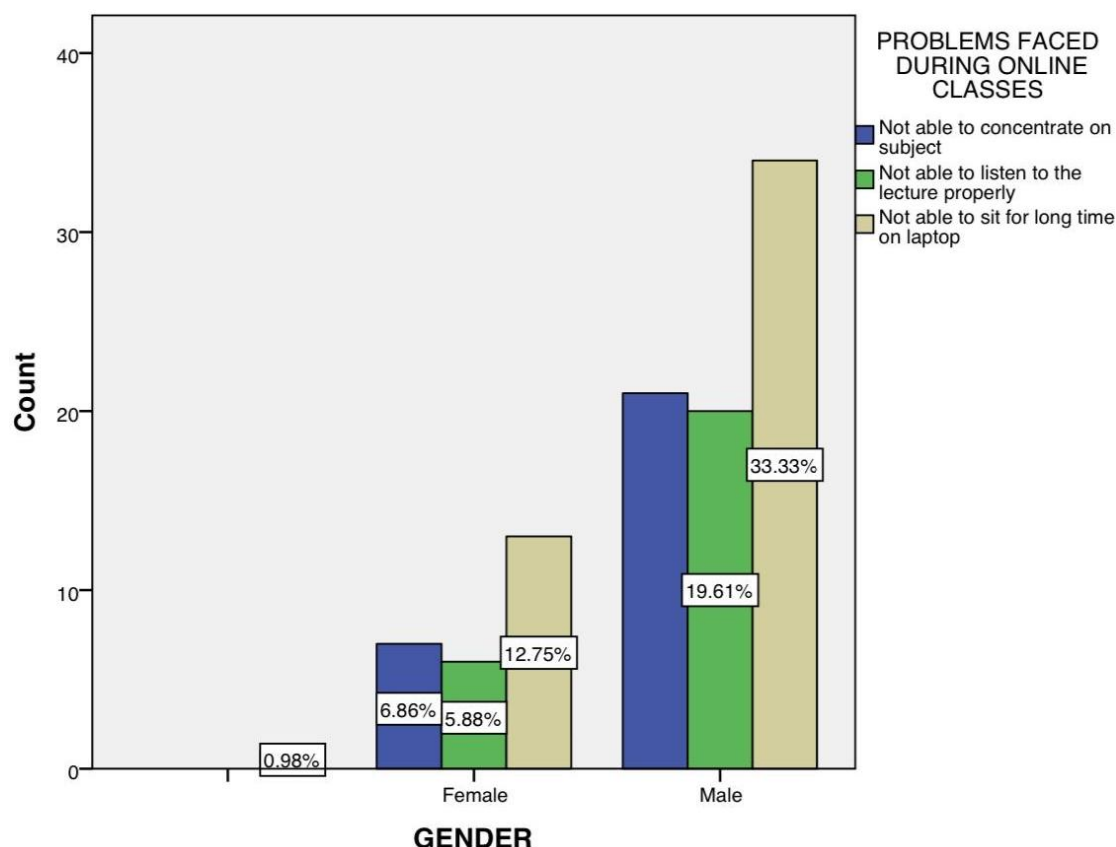


FIGURE 8 Bar graph showing association between gender and problems faced during online classes. The X-axis represents gender and Y-axis represents problems faced during online classes. 33.33% of male responded that they were not able to sit for a long time on a laptop and 12.75% of females responded not able to sit for a long time on laptop. beige colour represents not able to sit for long time on laptop, blue colour represent not able to concentrate on subject, green colour represent not able to listen to the lecture properly. A chi-square test was done and the association was found to be statistically not significant. Chi square value: 1.331 and p-value: 0.856, ($p > 0.05$). Hence statistically not significant.

In our present study, 47.06% of participants responded that they were not able to sit for a long time on a laptop are the problems they faced during online classes (figure 1). 86.27% of participants responded that online class was helpful (figure 2). 61.76% of participants responded that traditional blackboard teaching is the best mode of education in future (figure 3). 50% of participants responded that overall online education was excellent (figure 4). 75.49% of participants responded that more than 6 hrs were spent on online classes per day (figure 5). 43.14% of male responded overall that online education was excellent and 12.75% of females responded overall that online education was very good (figure 6). 62.75% of male responded online class was helpful and 23.53% of females responded online class was helpful (figure 7).

33.33% of male responded that they were not able to sit for a long time on a laptop and 12.75% of females responded that they were not able to sit for a long time on laptop (figure 8).

People who are aged among 21 to 25 (60%) are more aware of online education. Half (50%) of the people respond that overall feel about online education is excellent. More than 6 hrs (75%) responded that we spent for online class per day. Most of the people responded that traditional blackboard teaching (69%) will be more helpful in future. Most people responded that we feel stressed after online class (71%). Problems faced during online class (50%) responded to not being able to sit in front of the laptop for a long time. In previous research they found that regarding the attitude toward the learning delivery method, the quantitative and qualitative result showed that students prefer face to face interaction(5). Research has indicated that a comparatively higher degree of students learning and effective teaching can be achieved when the use of technology(24). Online education experience is typically asynchronous and also incorporates synchronous elements(22,36). The majority of institutions utilize a Learning Management System for the administration of online courses(25)(26),(27)(28),(29)(30)(31–35) . The limitations of the survey study population is only among the college students. In future, larger samples among various students, professions or even the general public can be done.

CONCLUSION

This study examined college students' perceptions of the physiological changes of online education. Electronic help was provided for the online class. Online education has a number of advantages, including improved time management, demonstrated self-motivation and new technical skills. Knowledge is transferred in a simple and effective manner. In a modern culture, online education is a valuable telecommunication technology for delivering knowledge and meeting the need for learning.

REFERENCE

1. Al-Hariri MT, Al-Hattami AA. Impact of students' use of technology on their learning achievements in physiology courses at the University of Dammam. J Taibah Univ Med Sci. 2017 Feb;12(1):82–5.
2. Nguyen VA. The Impact of Online Learning Activities on Student Learning Outcome in Blended Learning Course [Internet]. Vol. 16, Journal of Information & Knowledge Management. 2017. p. 1750040. Available from:

<http://dx.doi.org/10.1142/s021964921750040x>

3. Chiou H-H. The impact of situated learning activities on technology university students' learning outcome [Internet]. Vol. ahead-of-print, Education Training. 2020. Available from: <http://dx.doi.org/10.1108/et-04-2018-0092>
4. Baker C. The Impact of Instructor Immediacy and Presence for Online Student Affective Learning, Cognition, and Motivation [Internet]. Vol. 7, The Journal of Educators Online. 2010. Available from: <http://dx.doi.org/10.9743/jeo.2010.1.2>
5. Usman O, Kusuma C. The Effect of Mobile Learning Activities on Student Involvement, Learning Motivation, and Learning Achievement [Internet]. SSRN Electronic Journal. Available from: <http://dx.doi.org/10.2139/ssrn.3642367>
6. Linsin M. The Smart Classroom Management Way: 10 Years of Writing From the Top Classroom Management Blog in the World. Independently Published; 2019. 248 p.
7. Saraswathi I, Saikarthik J, Senthil Kumar K, Madhan Srinivasan K, Ardhanaari M, Gunapriya R. Impact of COVID-19 outbreak on the mental health status of undergraduate medical students in a COVID-19 treating medical college: a prospective longitudinal study. PeerJ. 2020 Oct 16;8:e10164.
8. Santhakumar P, Roy A, Mohanraj KG, Jayaraman S, Durairaj R. Ethanolic Extract of Capparis decidua Fruit Ameliorates Methotrexate-Induced Hepatotoxicity by Activating Nrf2/HO-1 and PPAR γ Mediated Pathways. Ind J Pharm Educ. 2021 Mar 19;55(1s):s265–74.
9. Nambi G, Kamal W, Es S, Joshi S, Trivedi P. Spinal manipulation plus laser therapy versus laser therapy alone in the treatment of chronic non-specific low back pain: a randomized controlled study. Eur J Phys Rehabil Med. 2018 Dec;54(6):880–9.
10. Rajakumari R, Volova T, Oluwafemi OS, Rajesh Kumar S, Thomas S, Kalarikkal N. Grape seed extract-soluplus dispersion and its antioxidant activity. Drug Dev Ind Pharm. 2020 Aug;46(8):1219–29.
11. Clarizia G, Bernardo P. Diverse Applications of Organic-Inorganic Nanocomposites: Emerging Research and Opportunities: Emerging Research and Opportunities. IGI Global; 2019. 237 p.
12. Prakash AKS, Devaraj E. Cytotoxic potentials of *S. cumini* methanolic seed kernel extract in human hepatoma HepG2 cells [Internet]. Vol. 34, Environmental Toxicology. 2019. p. 1313–9. Available from: <http://dx.doi.org/10.1002/tox.22832>

13. Tahmasebi S, Qasim MT, Krivenkova MV, Zekiy AO, Thangavelu L, Aravindhan S, et al. The effects of oxygen-ozone therapy on regulatory T-cell responses in multiple sclerosis patients. *Cell Biol Int*. 2021 Jul;45(7):1498–509.
14. Wadhwa R, Paudel KR, Chin LH, Hon CM, Madheswaran T, Gupta G, et al. Anti-inflammatory and anticancer activities of Naringenin-loaded liquid crystalline nanoparticles in vitro. *J Food Biochem*. 2021 Jan;45(1):e13572.
15. Vivekanandhan K, Shanmugam P, Barabadi H, Arumugam V, Raj DDRD, Sivasubramanian M, et al. Emerging Therapeutic Approaches to Combat COVID-19: Present Status and Future Perspectives [Internet]. Vol. 8, *Frontiers in Molecular Biosciences*. 2021. Available from: <http://dx.doi.org/10.3389/fmolb.2021.604447>
16. Sulisworo D. The Effect of Gender and Online Collaborative Learning Strategy to Student Learning Motivation [Internet]. Vol. 2, *International Journal of Learning and Development*. 2012. p. 49. Available from: <http://dx.doi.org/10.5296/ijld.v2i6.1989>
17. Helmer PO, Nicolai MM, Schwantes V, Bornhorst J, Hayen H. Investigation of cardiolipin oxidation products as a new endpoint for oxidative stress in *C. elegans* by means of online two-dimensional liquid chromatography and high-resolution mass spectrometry. *Free Radic Biol Med*. 2021 Jan;162:216–24.
18. Kiratisin A. IMPROVING STUDENT LEARNING MOTIVATION BY BLENDING ONLINE LEARNING WITH ONSITE LABORATORY COURSE: CASE STUDY OF DIAMOND GRADING COURSE [Internet]. *EDULEARN19 Proceedings*. 2019. Available from: <http://dx.doi.org/10.21125/edulearn.2019.0935>
19. Mekovec R. ONLINE LEARNING: STUDENT ACTIVITIES AND THEIR PRIVACY CONCERNS [Internet]. *EDULEARN20 Proceedings*. 2020. Available from: <http://dx.doi.org/10.21125/edulearn.2020.1806>
20. Dede C, Richards J, Saxberg B. *Learning Engineering for Online Education: Theoretical Contexts and Design-Based Examples*. Routledge; 2018. 232 p.
21. Kearsley G. *Online Education: Learning and Teaching in Cyberspace*. Wadsworth Publishing Company; 2000. 207 p.
22. Hansen AD. *Pioneers of asynchronous online education at religion-based institutions of higher education: A multiple case study exploring the process of adoption of online education at three private Catholic colleges* [Internet]. Available from: <http://dx.doi.org/10.30707/etd2014.hansen.a>
23. Zelviene P, Daniunaite I, Hafstad GS, Thoresen S, Truskauskaite-Kuneviciene I,

- Kazlauskas E. Patterns of abuse and effects on psychosocial functioning in Lithuanian adolescents: A latent class analysis approach. *Child Abuse Negl.* 2020 Oct;108:104684.
24. Khan BH. *Managing E-learning: Design, Delivery, Implementation, and Evaluation*. IGI Global; 2005. 424 p.
 25. Ezhilarasan D. Critical role of estrogen in the progression of chronic liver diseases. *Hepatobiliary Pancreat Dis Int.* 2020 Oct;19(5):429–34.
 26. Egbuna C, Mishra AP, Goyal MR. *Preparation of Phytopharmaceuticals for the Management of Disorders: The Development of Nutraceuticals and Traditional Medicine*. Academic Press; 2020. 574 p.
 27. Kamath SM, Manjunath Kamath S, Jaison D, Rao SK, Sridhar K, Kasthuri N, et al. In vitro augmentation of chondrogenesis by Epigallocatechin gallate in primary Human chondrocytes - Sustained release model for cartilage regeneration [Internet]. Vol. 60, *Journal of Drug Delivery Science and Technology*. 2020. p. 101992. Available from: <http://dx.doi.org/10.1016/j.jddst.2020.101992>
 28. Barabadi H, Mojab F, Vahidi H, Marashi B, Talank N, Hosseini O, et al. Green synthesis, characterization, antibacterial and biofilm inhibitory activity of silver nanoparticles compared to commercial silver nanoparticles [Internet]. Vol. 129, *Inorganic Chemistry Communications*. 2021. p. 108647. Available from: <http://dx.doi.org/10.1016/j.inoche.2021.108647>
 29. Bharath B, Perinbam K, Devanesan S, AlSalhi MS, Saravanan M. Evaluation of the anticancer potential of Hexadecanoic acid from brown algae *Turbinaria ornata* on HT–29 colon cancer cells [Internet]. Vol. 1235, *Journal of Molecular Structure*. 2021. p. 130229. Available from: <http://dx.doi.org/10.1016/j.molstruc.2021.130229>
 30. Gowhari Shabgah A, Ezzatifar F, Aravindhan S, Olegovna Zekiy A, Ahmadi M, Gheibihayat SM, et al. Shedding more light on the role of Midkine in hepatocellular carcinoma: New perspectives on diagnosis and therapy. *IUBMB Life*. 2021 Apr;73(4):659–69.
 31. Sridharan G, Ramani P, Patankar S, Vijayaraghavan R. Evaluation of salivary metabolomics in oral leukoplakia and oral squamous cell carcinoma. *J Oral Pathol Med*. 2019 Apr;48(4):299–306.
 32. R H, Hannah R, Ramani P, Ramanathan A, Jancy MR, Gheena S, et al. CYP2 C9 polymorphism among patients with oral squamous cell carcinoma and its role in altering the metabolism of benzo[a]pyrene [Internet]. Vol. 130, *Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology*. 2020. p. 306–12. Available from:

<http://dx.doi.org/10.1016/j.oooo.2020.06.021>

33. J PC, Pradeep CJ, Marimuthu T, Krithika C, Devadoss P, Kumar SM. Prevalence and measurement of anterior loop of the mandibular canal using CBCT: A cross sectional study [Internet]. Vol. 20, Clinical Implant Dentistry and Related Research. 2018. p. 531–4. Available from: <http://dx.doi.org/10.1111/cid.12609>
34. Wahab PUA, Abdul Wahab PU, Madhulaxmi M, Senthilnathan P, Muthusekhar MR, Vohra Y, et al. Scalpel Versus Diathermy in Wound Healing After Mucosal Incisions: A Split-Mouth Study [Internet]. Vol. 76, Journal of Oral and Maxillofacial Surgery. 2018. p. 1160–4. Available from: <http://dx.doi.org/10.1016/j.joms.2017.12.020>
35. Mudigonda SK, Murugan S, Velavan K, Thulasiraman S, Krishna Kumar Raja VB. Non-suturing microvascular anastomosis in maxillofacial reconstruction- a comparative study. Journal of Cranio-Maxillofacial Surgery. 2020 Jun 1;48(6):599–606.
36. Kamath, S. M. *et al.* (2020) ‘In vitro augmentation of chondrogenesis by Epigallocatechin gallate in primary Human chondrocytes - Sustained release model for cartilage regeneration’, *Journal of Drug Delivery Science and Technology*, p. 101992. doi: 10.1016/j.jddst.2020.101992.