

Satisfaction Level among the Nursing Students with Web-based Learning amid COVID-19 Lockdown in India: A Cross-sectional Survey

Sukhpal Kaur¹, Sushma Kumari Saini², Nitasha Sharma³, Geetanjali Kalyan⁴, Karobi Das⁵

ABSTRACT

Background: Coronavirus disease-2019 (COVID-19) pandemic has pushed the traditional practice of classroom teaching to technology-based online classes.

Objective: To assess the satisfaction level among the nursing students with web-based learning at a prestigious nursing institution affiliated to a tertiary care center of India.

Materials and methods: A cross-sectional study design was employed. A standardized questionnaire on Satisfaction of Online Learning Instrument was sent to 521 undergraduate and postgraduate nursing students through various WhatsApp groups; of which, 310 students responded.

Results: 98.7% of the study participants were females. The majority of the students were undergoing Bachelor in Nursing course. The highest percent scores (68%) regarding satisfaction were obtained on the domain "effectiveness of feedback" followed by the domain "Dialogue between teachers and students".

Conclusion: The majority of the students felt dissatisfied with online learning. However, online teaching served as a boon in this time of the pandemic.

Keywords: Learning, Nursing students, Satisfaction, Teaching.

Journal of Postgraduate Medicine, Education and Research (2021): 10.5005/jp-journals-10028-1438

INTRODUCTION

The social distancing restrictions related to the coronavirus disease-2019 (COVID-19) pandemic have significantly impacted the educational system worldwide. This ongoing pandemic has left no choice other than the complete transition of teaching from the physical classroom to online education. Thus, online teaching has become an important demand of academics even in professional courses like nursing in this pandemic. In the process of online education, the communication and interaction between students and teachers take place through Internet-based learning technologies.¹

Quality is a significant parameter to assess the delivery of any course or program. It helps in determining the appropriate teaching-learning method to be used based on the needs of the students, the availability of the resources, and the demands of the discipline. The five pillars that support quality in online education including the effectiveness, access, student satisfaction, faculty satisfaction, and institutional cost-effectiveness were first used by Mayadas in the year 1998.² These five pillars of quality have also been adopted by The Sloan Consortium which is a non-profit organization as part of its quality framework. Satisfaction of students with online learning is the most important key to continue and improve technology-based learning. It is the perceived value of the learner with the educational experiences in an educational setting.³ It is an important concept because it eventually may lead to motivation, engagement, learning, performance, and finally the success.^{4,5} That is why it is important to assess the satisfaction of students with this newly adopted online teaching-learning process during COVID-19.

¹⁻⁵National Institute of Nursing Education, Postgraduate Institute of Medical Education and Research, Chandigarh, India

Corresponding Author: Nitasha Sharma, National Institute of Nursing Education, Postgraduate Institute of Medical Education and Research, Chandigarh, India, Phone: +91 8289041446, e-mail: nitasha470@yahoo.com

How to cite this article: Kaur S, Saini SK, Sharma N, *et al.* Satisfaction Level among the Nursing Students with Web-based Learning amid COVID-19 Lockdown in India: A Cross-sectional Survey. *J Postgrad Med Edu Res* 2021;55(2):64–69.

Source of support: Nil

Conflict of interest: None

Several aspects influence student satisfaction with virtual teaching. As per Bolliger and Martindale,⁶ the behavior of instructor, technological reliability, and interactivity are the most substantial factors of students' satisfaction. The characteristics of the learners determining their perceived satisfaction are also important factors.⁷ The important constructs identified in various studies are the students' perceptions of task value and self-efficacy, social ability, quality of the system, instructional design issues, quality of the delivery system and multimedia instruction, etc.^{8,9}

The students of today are more diverse than ever before. They are more technologically proficient and the majority have learned computers and already have the experience of web technologies by the time they reach college. However, Sun *et al.* have reported that the satisfaction of the students is influenced by computer anxiety, flexibility, variety in assessments, usefulness, and ease of use.¹⁰ They

should be confident to be successful with learning through online technology.¹¹ Their satisfaction is also linked to their performance evaluation. The performance of the students is also an important component in the assessment of satisfaction among the faculty. Hartman et al.¹² have endorsed a strong correlation between faculty satisfaction and student learning.

Though during the lockdown period due to the COVID-19 pandemic, the online platform is the only choice with numerous advantages, it has its own challenges and disadvantages. The advantages of virtual teaching include liberty to continue teaching-learning despite social distancing norms, use of various online tools and methods, and flexible scheduling of the classes. The students can listen to the recorded conversations of the sessions at their own pace and speed. However, there are certain disadvantages of online teaching. These may be regarding the technical difficulties because of poor access and speed of Internet leading to disruption in free-flowing conversations, deliberations, and discussions of the sessions, non-participation in the class, and non-availability of an adequate size screen device that facilitates a clear view of the presenters' content. Moreover, there could be distractions while studying at home and with family. Muilenburg and Berge¹³ have also reported numerous barriers to online learning being faced by the students. These include administrative issues, interaction within the students, technical skills, motivation, time, limited access to resources, less satisfaction and deficient performance of the student, etc.^{14,15}

There could be a considerable percentage of the students using the online approach of learning for the first time during this pandemic phase. This may affect their perception of the e-learning mode of learning.¹⁶ Though there is no choice of teaching owing to the current situation, still it is important to measure the satisfaction level of the students with this virtual approach of teaching. In a recent study conducted in Pakistan on e-learning, it has been reported that the medical students did not prefer the online mode of teaching. They have recommended that necessary measures should be taken by the administration and faculty for improving online teaching for better learning during the lockdown.¹⁷ However, another study on students' perception of online learning during the COVID pandemic has reported that the majority of the participants found the sessions to be relevant to their learning needs and clinical practice. They perceived that the sessions were tailored to their level of learning. They also found that the sessions were interesting and enjoyable.¹⁸

The current study was carried out to assess the satisfaction level among the nursing students with web-based learning at a prestigious nursing institution affiliated with a tertiary care center in North India.

MATERIALS AND METHODS

The research design was a descriptive cross-sectional survey. Nursing students of the National Institute of Nursing Education, PGIMER, Chandigarh, involved in online teaching-learning during the lockdown period of COVID-19 were selected for the study by total enumeration sampling technique. It is a National level Nursing Institute and runs three nursing courses, i.e., B.Sc. Nursing (354 students), B.Sc. Nursing Post Basic (113 students), and M.Sc. Nursing (54 students).

The Modified "Satisfaction of Online Learning Instrument" developed by Davis from the University of Kentucky and available free for the use of researchers was used in the study.¹⁹ Initial

instrument had 24 questions divided into eight domains. However, six questions and one domain were not applicable in the present study, hence were deleted. The Modified "Satisfaction of online Learning Instrument" comprises 17 questions divided into seven domains. The modified instrument was validated by experts in the field of nursing. The Cronbach alpha for the overall scale was 0.93 and the alpha for individual subscales was >0.7 for all the subscales except the use of discussion boards with an alpha of 0.5. The 17 statements of the scale were to be rated on a five-point Likert Scale ranging from strongly agree—5, to strongly disagree—1, i.e., to be scored as strongly agree—5, agree—4, neutral—3, disagree—2, and strongly disagree—1 with a minimum score of 17 and maximum score as 85. The questionnaire was divided into seven domains: (1) Effectiveness of the feedback, (2) Use of discussion board, (3) Dialogue between teachers and students, (4) Perceptions of online experiences, (5) Teacher characteristics, (6) The feel of a learning community, and (7) Computer-mediated communication. Domain 1, 2, 6, 7 has two statements each with a score range of 2–10 and domain 3, 4, and 5 has three statements each with a score range of 3–15. The total score (17–85) was further divided into four categories, i.e., highly satisfied (68–85), satisfied (51–67), dissatisfied (35–50), and highly dissatisfied (17–34). The instrument was developed into a Google form. The questionnaire was pilot tested on 10 nursing students which revealed that the questionnaire was feasible to be administered and the language of all the questions was clear to the students.

ETHICAL CONSIDERATIONS

Before commencing this study, ethical clearance was obtained from the Institute's Ethics Committee as per letter no. NK/6307/study/595. The participation was voluntary. Online consent was taken from all the participants. The participants were allowed to clarify any aspect of the research. They were also informed that they can withdraw from the study at any time. The confidentiality/anonymity was maintained throughout the research process.

DATA COLLECTION

The link of the Google form of the questionnaire was shared with the different WhatsApp groups of different classes, i.e., B.Sc. Nursing 1st, 2nd, 3rd, and 4th year; BSc Nursing (Post Basic) 1st and 2nd year; MSc Nursing 1st and 2nd year. All the students (521) were asked to fill the online questionnaire. Those who did not respond in the specified period were given repeated reminders and the proforma was closed down after 3 weeks. By the end of 3 weeks, 310 students filled the form with a response rate of 59.5%. The collected data were analyzed by SPSS version 20.

RESULTS

Information Profile of Students

The information profile of all the students who participated in the survey is depicted in Table 1. The majority of the students were undergoing the bachelor in the nursing course while only 7% were in master in the nursing level course. The majority (98.7%) of the study participants were females. Most (92.9%) of them used laptops for taking online web-based classes.

Student's Satisfaction

Table 2 depicts the item-wise score on each item of the student's satisfaction scale. The scale has a total of 7 subscales and each subscale corresponding items are depicted in the table. The mean

Table 1: Sociodemographic profile of students (N = 310)

Variable	n (%)
Gender	
• Female	306 (98.7)
• Male	4 (1.3)
Course enrolment	
• Bacalaureate	287 (92.6)
• Masters	23 (7.4)
Gadget use for a web-based class	
• Android phone	23 (7.1)
• Laptop	287 (92.9)

rating on all the items was close to 3 except item no. 4.3, stated as "I would rather take online courses than traditional courses" with the lowest mean rating of 2.6. The domain with the most favorable responses toward satisfaction was the domain of effectiveness of feedback followed by the domain on a dialogue between students and teachers. More than half of the students agreed/strongly agreed to two statements, i.e., sufficient explanations on my specific questions related to my classwork (55.5%); and many aspects (features) of online education are enjoyable to me as a learner (53.6%).

Domain-wise Score and Levels of Satisfaction

Table 3 depicts the mean scores on each domain of the scale. The highest percent scores (68%) were obtained on the domain "effectiveness of feedback". Another domain "Dialogue between teachers and students" ranked second in satisfaction percent score and the domain of "feel of learning community" had the lowest percent score.

Table 4 depicts the distribution of the participants based on the scores obtained. The majority of the students felt dissatisfied with online learning. It was the only 1/5th of all students who felt satisfied with this unconventional teaching in nursing.

DISCUSSION

Technology has made teaching and learning possible from a distance. Online classes provide many advantages to the students as well as the teachers. It saves computing time and money to traditional classroom teaching. Lack of infrastructure for having face-to-face classes can also be taken care of by online classes. However, along with advantages the online classes cite problems related to privacy issues, technical difficulties, and a focus on technology rather than on content in some situations. The present study aimed at assessing the satisfaction with online web-based learning in nursing students using a standardized rating scale.

Various aspects of online learning were under consideration to rate the overall satisfaction. One of the domains with which students have expressed the highest satisfaction is the domain on effectiveness of the feedback scoring 68% score. Clarification of doubts and explanations to the questions of students are the important aspects bringing satisfaction to the students in understanding the contents taught in the classroom. This aspect was well-taken care of by the teachers as expressed by more than half of the students in the present study.

Communication between student and teacher was considered the second highest domain by the students with a domain score

of 64.4%. Personalized communication is very important to recruit, engage, and retain online students during the class. In an online classroom since the instructor cannot gauge the overall interest and engagement of the students from their body language or other non-verbal cues, thus adjusting the pace of presentation can be a major challenge.²⁰ That is why the instructors are required to integrate certain effective communication strategies in making learning impactful and enhance student engagement. Some of the key recommendations to improve online dialogue between student and instructor are to acknowledge the first responses, to encourage reluctant participants while focusing on the dominant participant's energy.²¹ Use of discussion board is considered critical in online learning. A series of well-planned activities on a discussion board is likely to increase student engagement and critical thinking. In the current dataset, hardly 5.2% of students reported satisfaction with the use of discussion boards. The discussion boards include the activities like directed discussions, brainstorming sessions, debates, workshops, etc.²² The common reasons for low satisfaction could be the lack of preparedness of both the students and instructors in using online platforms like chats and posts during teaching. Lack of familiarity as well as anxiety of using such formats can be the underlying factors.

A very small fraction of students, i.e., only 3.3% strongly felt the satisfaction in the context of the feeling of learning community with sufficient caring and sharing among students. The building of an online learning community has the potential to transform isolated lonely learning into a rich interactive environment.²³ A study revealed the key elements of a shared community learning through a qualitative study among students enrolled in a graduate course. The key elements reported were a sense of shared purpose, purposeful communication involving encouragement and support, collaborating to learn course material, working for an extended period on a common goal, and comfortable exchange of ideas in an organized fashion. Both the students and the teachers felt that the learning community can be encouraged by including structured, collaborative activities in course design and with the inclusion of opportunities for intentional, supportive, and ongoing interaction.²⁴ The findings of the current study highlight the need for imparting training to teachers and students in integrating such activities in online classrooms for better learning especially in a curriculum of nursing where the online mode of teaching is so novice both to teachers and the learners.

"Perception domain" of online teaching was not much appreciated by the learners. Only 20% of learners were ready to take online classes in place of traditional face-to-face classes. In fact, from the beginning itself, the students are tuned to take face-to-face classes only. Thus, they may not be able to adapt this sudden change of traditional classroom teaching to online classes.

It is needless to mention that "high-quality teaching has a profound, positive and transformational impact on the teaching and learning process".²⁵ In fact, "excellence in teaching is the single most powerful influence on achievement". It is argued upon that "of all the factors within our control in the educational enterprise, and teacher quality matters most".²⁶ This aspect of online teaching was also assessed in the current study in the domain on "teacher's characteristics." Less than 50% of the students agreed upon the items assessing satisfaction they derived through the explanation they got from instructors, the amount of help they got and the satisfaction by virtue of creativity in the class. A qualitative study by Rose on exploring attributes of an online teacher highlighted

Table 2: Item-wise score on the student satisfaction scale

<i>Statements related to student satisfaction</i>	<i>Strongly disagree</i>	<i>Disagree</i>	<i>Neutral</i>	<i>Agree</i>	<i>Strongly agree</i>	<i>Mean (S.D)</i>
Domain 1: Effectiveness of the feedback						
I am satisfied with my online learning experience because effective feedback related to my classwork is constantly provided to me in terms of:	11 (3.5)	35 (11.3)	110 (35.5)	136 (43.9)	17 (5.5)	3.3 (0.8)
1.1 Clarification for my questions about the classes and assignments.						
1.2 Sufficient explanations on my specific questions related to my class work	8 (2.6)	33 (10.6)	96 (31.0)	154 (49.7)	18 (5.8)	3.4 (0.8)
Domain 2: Use of discussion board						
2.1 I am satisfied with my online learning experience because I have plenty of time to think and draft my responses for online discussions	10 (3.2)	54 (17.4)	111 (35.8)	117 (37.7)	16 (5.2)	3.2 (0.9)
2.2 Discussion boards make me more comfortable in participating than traditional modes of discussion	11 (4.0)	54 (17.4)	111 (35.8)	118 (37.7)	16 (5.2)	3.2 (0.9)
Domain 3: Dialogue between teachers and students						
I am satisfied with my online learning experience because	16 (5.2)	67 (21.6)	96 (31)	106 (34.2)	24 (7.7)	3.1 (1.0)
3.1 I am able to communicate effectively with my teacher						
3.2 Online dialogue with my teacher helps me as I learn in the online course	13 (4.2)	40 (12.9)	104 (33.5)	136 (43.9)	17 (5.3)	3.3 (0.9)
3.3 I feel less distant in my online learning due to online dialogue with my teacher	7 (2.3)	45 (14.5)	121 (39)	126 (40.6)	9 (2.9)	3.2 (0.9)
Domain 4: Perceptions of online experiences						
I am satisfied with my online learning experience because	16 (4.8)	55 (17.7)	108 (34.5)	109 (35.0)	22 (7.1)	3.2 (0.9)
4.1 My personal needs as a student are met in the online environment						
4.2 Many aspects (features) of online education are enjoyable to me as a learner	7 (2.3)	39 (12.6)	96 (31.0)	140 (45.2)	26 (8.4)	3.4 (0.8)
4.3 Overall, I would rather take online courses than traditional courses	49 (15.8)	98 (31.6)	99 (31.9)	46 (14.8)	14 (4.5)	2.6 (1.0)
Domain 5: Teacher characteristics						
I am satisfied with my online learning experience because	13 (4.2)	57 (18.4)	94 (30.3)	121 (39)	23 (7.4)	3.2 (0.9)
5.1 I still get the same explanation from online teachers as I do from traditional teachers						
5.2 Online teachers and traditional teachers offer the same amount of help with my learning issues	13 (4.0)	64 (20.6)	96 (31.0)	120 (38.6)	17 (5.5)	2.9 (1.0)
5.3 Technology makes online teachers more creative in teaching than a more traditional classroom	23 (7.4)	89 (28.7)	109 (35.2)	70 (22.0)	19 (6.1)	2.9 (1.0)
Domain 6: The feel of a learning community						
I am satisfied with my online learning experience because:	16 (5.2)	74 (23.9)	109 (35.0)	100 (32.0)	10 (3.2)	3.0 (0.9)
6.1 The online environment is like a community where I can communicate with other students						
6.2 The online environment promotes sufficient sharing and caring among students	13 (4.2)	85 (27.4)	102 (33.0)	98 (31.6)	12 (3.9)	3 (0.9)
Domain 7: Computer-mediated communication						
7.1 Computer-mediated communication makes me feel like a real person when I communicate in the online environment	19 (6.1)	65 (21.0)	128 (41.0)	85 (27.4)	13 (4.2)	3.3 (0.9)
7.2 Computer-mediated communication allows me to feel the presence of my teacher and other students in the online environment	14 (4.5)	53 (17.0)	102 (33.0)	128 (41.3)	13 (4.2)	3.2 (0.9)

Table 3: Summary on domain-wise score and mean percent scores

Domains	No. of items	Score range	Domain score, Mean score \pm SD	Mean percent score
Effectiveness of the feedback	2	2–10	6.8 \pm 1.6	68.0
Use of discussion board	2	2–10	6.3 \pm 1.5	63.0
Dialogue between teachers and students	3	3–15	9.7 \pm 2.3	64.6
Perceptions of online experiences	3	3–15	9.2 \pm 2.4	61.3
Teacher characteristics	3	3–15	9.3 (2.4)	62.0
The feel of a learning community	2	2–10	6.0 (1.6)	60.0
Community-mediated communication	2	2–10	6.2 (1.7)	62.0

Table 4: Levels of satisfaction among the participants

Score range	n (%)
17–34 (highly dissatisfied)	36 (11.6)
35–51 (dissatisfied)	211 (68.1)
52–68 (satisfied)	62 (20.0)
68–85 (highly satisfied)	1 (0.3)

that one of such key attributes is to avoid a didactic approach. Effective online teaching and learning are not just about passing on information, presenting huge chunks of material to learners, and/or merely communicating information from the teacher to the student. Second, the study reported that teachers must vary their pedagogy.²⁷

CONCLUSION

It is worthy to mention here that the results of the present study should be read in the context of the COVID-19 pandemic. The curriculum of nursing has no place for online education traditionally. This system was adopted on an ad hoc basis to minimize the educational losses and make the best possible effort to complete their curricular requirements. Neither teachers nor students were trained or prepared for online web-based education. Furthermore, the tool used for assessment does not assess the dissatisfaction arising out of the Internet connectivity or other device-related issues. Yet, online education served as a boon in this time of the pandemic.

REFERENCES

- Curran C. Online learning and the university. In: Bramble WJ, Panda S, ed. *Economics of distance and online learning: theory, practice, and research*, New York: Routledge. distance: Foundations of distance education 4th ed., Boston: Allyn & Bacon; 2008. pp. 26–51.
- Our Quality Framework. Online Learning Consortium. Retrieved 14 Apr 2021. from <https://onlinelearningconsortium.org/about/quality-framework-five-pillars/>.
- Astin AW. *What matters in college? Four critical years revisited*. San Francisco, CA: Jossey-Bass; 1993. Retrieved 15 Aug 2021 from <https://eric.ed.gov/?id=ED351927>.

- Sahin I, Shelley M. Considering students' perceptions: the distance education student satisfaction model. *Educ Technol Soc* 2008;11(3):216–223.
- Wickersham LE, McGee P. Perceptions of satisfaction and deeper learning in an online course. *Quart Rev Dista Educat* 2008;9(1):73–83.
- Bolliger DU, Martindale T. Key factors for determining student satisfaction in online course. *J E-Learn* 2004;3(1):61–67.
- Phipps R, Merisotis J. What's the difference: A review of contemporary research on the effectiveness of distance learning in higher education. 1999. Washington, DC: Institute for Higher Education Policy. Retrieved 26 Jul. 2020 from <http://www.ihep.org/assets/files/publications/s-z/WhatDifference.pdf>.
- Liaw SS. Investigating students' perceived satisfaction, behavioral intention, and effectiveness of e-learning: a case study of the Blackboard system. *Comput Educat* 2008;51(2):864–873. DOI: 10.1016/j.compedu.2007.09.005.
- Lin Y, Lin G, Laffey JM. Building a social and motivational framework for understanding satisfaction in online learning. *J Educat Comput Res* 2008(1):1–27. DOI: 10.2190/EC.38.1.a.
- Sun P, Tsai RJ, Finger G, et al. What drives a successful e-learning? An empirical investigation of critical factors influencing learner satisfaction. *Computers and Education* 2008;50(4):1183–1202. DOI: 10.1016/j.compedu.2006.11.007.
- Sloan C. Quick guide. Pillar reference manual. Needham, 2002, MA: Author. Retrieved 26 July 2020 from http://www.sloan-c.org/publications/books/dprm_sm.pdf.
- Hartman JL, Dziuban CD, Moskal P. Faculty satisfaction in ALNs: a dependent or independent variable? In Bourne J, ed. *Online education: Learning Effectiveness and Faculty Satisfaction*. Nashville, TN: Center for Asynchronous Learning Networks; 2000. pp. 151–172.
- Muilenburg LY, Berge ZL. Student barriers to online learning: a factor analytic study. *Distan Educat* 2005;26(1):29–48. DOI: 10.1080/01587910500081269.
- Navarro P. The promise – and potential pitfalls – of cyberlearning. In R.A. Cole online courses. *Int J E-Learn* 2000;3(1):61–67.
- Saini SK, Kaur S, Sharma N, et al. Satisfaction among the nursing teachers with web-based teaching during COVID-19: a cross-sectional survey. *International Journal of Community Medicine and Public Health* 2021;8(4):2000–2006. DOI: 10.18203/2394-6040.ijcmph20211270.
- Nagar S. Students' perception towards e-learning and effectiveness of online sessions amid Covid-19 Lockdown Phase in India: An analysis. 2020, [https://www.fergusson.edu/upload/document/86850__Dr.ShrutiNagar\(IMDR\).pdf](https://www.fergusson.edu/upload/document/86850__Dr.ShrutiNagar(IMDR).pdf).
- Abbasi S, Ayoob T, Malik A, et al. Perceptions of students regarding E-learning during Covid-19 at a private medical college. *Pak J Med Sci* 2020;36(COVID19-54):557–561. DOI: 10.12669/pjms.36.COVID19-54.2766.
- Agarwal S, Kaushik JS. Student's perception of online learning during COVID pandemic. *Indian J Pediatr* 2020;87(7):554. DOI: 10.1007/s12098-020-03327-7.
- Davis AM. *Measuring Student Satisfaction in Online Math Courses. 2014, Theses and Dissertations--Curriculum and Instruction* submitted to University of Kentucky, Uknowledge. [cited on 4.4.2020] available from https://uknowledge.uky.edu/edc_etds/10.
- Betts KS. Lost in translation: Importance of effective communication in online education. Retrieved on August 4, 2020. Available at <https://www.westga.edu/~distance/ojdla/summer122/betts122.html>.
- Schwartz M. Effective online communication. Learning & Teaching Office. Retrieved on August 4, 2020. Available at <https://www.ryerson.ca/content/dam/learning-teaching/teaching-resources/teach-a-course/effective-online-communication.pdf>.
- Wilson M, Fairchild C. Collaborative learning and the importance of the discussion board. *J Diagonos Med Sonogra* 2011;27(1):45–51.
- Chen Yu-C. Building an online learning community. Retrieved on August 4, 2020. Available at <https://files.eric.ed.gov/fulltext/ED485055.pdf>.

24. Veseley P, Bloom L, Sherlock J. Key elements of building online community: comparing faculty and student perceptions. *MERLOT J Online Learn Teach* 2007;3(3):234–246.
25. Adams T, Aguilar E, Berg E, et al. A coherent system of teacher evaluation for quality teaching. *Educat Policy Anal Archiv* 23(17):1–26. DOI: 10.14507/epaa.v23.2006.
26. Hattie J. Teachers make a difference: What is the research evidence? Presented at the Australian Council for Educational Research Annual Conference on Building Teacher Quality, Melbourne, Australia. 2003, Retrieved from http://research.acer.edu.au/cgi/viewcontent.cgi?article=1003&context=research_conference_2003.
27. Rose Sr M. What are some key attributes of effective online teachers? *J Open, Flex Distan Learn* 2018;22(2):32–48.