

**Comparison of the Effectiveness of the Learning Process of the Community Nursing Nurse
Profession Conventionally Before the Covid-19 Pandemic And Online During the Covid-19
Pandemic**

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ABSTRACT

Background : The COVID-19 pandemic which requires *work from home* and *study from home* has caused a total change in nursing learning methods from conventional face-to-face to 100% online, including nursing professional education, including the community nursing station. Various online learning methods are used to fulfill learning outcomes according to the curriculum set by the Association of Indonesian Nurses Educational Institutions according to the KKNI (Indonesian National Competency Framework).

Research method : This study used a *non-equivalent control group posttest only design* . The study used a control group with a conventional learning process and an experimental group with online learning. The research was conducted by involving 143 nursing professional students of STIKes Santo Borromeus who were divided into two classes, Class A (n = 67) as the control group and Class B (n = 76 people) as the experimental group. Each group underwent community nursing practice learning for 3 weeks, one group before the pandemic and one group during the COVID-19 pandemic. Data collection by online questionnaire using *google forms* . Data analysis used the TOPSIS (*Technique For Others Reference by Similarity to Ideal Solution*) method on priority criteria to evaluate the effectiveness of the learning method.

Results : Conventional learning before the pandemic was more effective than online, supported by 74.5% of respondents with the advantage of ease of understanding the material and flexibility of lecture time.

Keywords : Community Nursing; Online Learning; Conventional Learning; TOPSIS

BACKGROUND

Background

Coronavirus Disease 2019 (abbreviated "COVID-19") is an emerging respiratory disease caused by a new coronavirus and was first detected in December 2019 in Wuhan, China (1). The disease is highly contagious and spreads very quickly, and as of February 15, 2020 the virus has reached 26 countries (2). The World Health Organization (WHO) declared it a public health emergency of international concern on January 30, 2020 and called for the collaborative efforts of all countries to prevent the spread of COVID-19 (3).

The government has issued instructions for social distancing (which was later upgraded to physical distancing) with its implementation also in the form of work from home (WFH), study from home (SFH), and worship from home since March 16, 2020 (4), and even then continues until now. with PPKM (Enforcement of Community Activity Restrictions) levels in various regions in Indonesia. The PPKM policy has a great impact on universities, including nursing colleges.

Universities require students to take online learning, including STIKes Santo Borromeus. This shift to virtual classrooms is the culmination of efforts to prevent COVID-19 from entering the college population (5).

Information technology is currently developing very rapidly, including in the field of education. Previously, learning had to be face-to-face, now universities can use e-learning as a learning medium. With e-learning nursing lecturers can enter learning materials in the form of writing, sound, video or others. Lecturers can also create quizzes or exams using e-learning, and the implementation is also carried out online. E-learning makes learning can be done from anywhere and anytime. However, on the other hand, some learning outcomes are becoming much more difficult to transfer online, especially those concerning aspects of practice or the psychomotor domain (skills).

Lecturers cannot do bedside teaching in real cases, it is difficult to make eye contact, observe gestures and expressions when students are supposed to communicate with clients. Therefore, it is necessary to develop a strategic plan with the aim that students have a sufficient number and quality of learning experiences to successfully complete the clinical, laboratory and simulation components, even in a virtual environment. The learning method chosen by the lecturer should support mastery and competence achievement (6).

The world of education (nursing) inevitably has to adapt to technological developments. At STIKes Santo Borromeus itself, currently, e-learning has not been fully implemented. Lecturers apply it to all programs, academic and nursing professions. For this reason, this study focuses on the process of evaluating the effectiveness of the teaching process for the profession of community nursing nurses in conventional terms before the COVID-19 pandemic and online during the COVID-19 pandemic. Conventionally, that is face-to-face to provide direct guidance to nursing professional students in the field (students are in the community) which has been applied previously, while online using various media such as Whatsapp, Zoom, Google meet, Youtube, Quizizz, Google Classroom, and others. .

Formulation of the problem

Based on the explanation above, the formulation of the problem in this research is "Is the Conventional Community Nursing Nurse Profession Learning Process Before the COVID-19 Pandemic more effective than Online During the COVID-19 Pandemic?"

Research purposes

The purpose of this study was to evaluate the effectiveness of the teaching process for the community nursing nurse profession conventionally before the COVID-19 pandemic and online during the COVID-19 pandemic at STIKes Santo Borromeus.

Special purpose

Evaluation of the effectiveness using a quantitative approach with a focus on the criteria: Flexibility of Lecture Time, Ease of Understanding the Material, Ease of Assignment Collection, and Ease of Interaction with Lecturers.

Research Urgency

A nurse is someone who has completed a bachelor's education program plus a nurse's professional education (7). One of the competencies of nurses according to the PPNI Indonesian Nurse Competency Standards is to practice professional nursing (including community nursing) in accordance with the laws and regulations (7). The condition of the practice area for learning the profession of community nursing nurses can also be an obstacle for lecturers to provide guidance to students so that alternative learning methods are needed as a solution in improving the quality of learning (8).

The COVID-19 pandemic has had a very broad impact on all aspects of life, including education. The Corona virus has caused schools in the San Francisco Bay area of the United States to close (9). In Canada, the provincial government of Alberta has closed schools and public facilities, as have Quebec and Ontario (10). These steps were also carried out in various countries affected by COVID-19, including the closure of nursing education institutions. The school closure policy itself is important. A recent COVID-19 modeling study estimated that school closures would prevent 2-4% of deaths (11).

The COVID-19 pandemic has caused practice fields to limit or even deny student clinical practice, at a time when more nurses are needed in service, so nursing education is struggling to find ways to cater to student clinical experiences (12). Many higher education institutions have turned to online learning models to ensure continuity of the teaching-learning process and assessment of students (13). The COVID-19 pandemic has disrupted the students' regular study schedule. The worldwide COVID-19 lockdown has caused the active hours of students that would normally be spent in college studying, to end up being spent at home. Students leave their routine study activities (13).

The COVID-19 pandemic has caused educational institutions to quickly transition all (conventional) professional practice curricula to online formats. Small-group discussions are held online in the form of virtual teams, and clinical skills sessions can take place online or be postponed later. However, this change will require further evaluation (14). The COVID-19 pandemic has made nursing students resilient and eager to develop knowledge about safe nursing care. In the current situation, many student learning achievements can continue to be achieved didactically, through virtual simulations, and clinical modalities by observing social distancing.

The crisis situation is a learning opportunity for students, even though students are not directly involved with COVID-19 patients. Students can benefit greatly from the re-emphasis of infection control theory and skills that are also at the core of the nursing education curriculum (15). No research has been found that investigates the impact of the COVID-19 pandemic that has caused the shift from the usual (conventional) nursing learning method to online learning on graduate competencies.

LITERATURE REVIEW

State Of The Art

The study entitled "Comparison of the Effectiveness of the Learning Process of the Conventional Community Nursing Nurses Station Before the COVID-19 Pandemic and Online During the COVID-19 Pandemic" used a quantitative approach with the *Technique for Order of Preference by Similarity to Ideal Solution* (TOPSIS) method to evaluate it. . The evaluation focused on the following criteria: Flexibility of Lecture Time, Ease of Understanding the Materials, Ease of Assignments, and Ease of Interaction with Lecturers.

Based on the literature search, we found that generally research on the effectiveness of conventional and online learning methods is a qualitative research in the form of a *Systematic Literature Review* (SLR).

Hakeim et al. (16) conducted a study that focused on *e-learning* and classroom learning for critical nursing lectures, by looking at their effect on student performance. The research design was quasi-experimental and the data was collected using a questionnaire. Research participants were second-level nursing students at Cairo University, with a control group (n=30) and a group (n=30). The *e-learning* module is designed and implemented for students in study groups. The results showed that the two groups had similar characteristics and there was no statistically significant difference between the two groups in terms of critical nursing knowledge. Statistically significant differences were found in students' critical nursing skills.

Thirunarayanan & Perez-Prado (17) examined the comparison of *web -based* learning and classroom-based learning, a quantitative study in education (not nursing). Thirunarayanan & Perez-Prado compared the performance of foreign (non-English speaking) students taking English courses, one group studying in a classroom (n = 31) and another group online (n = 29). The results showed that for the *pretest* the scores of students in the online group were significantly lower than students who studied in class face-to-face. The t-test of the students' *posttest scores* showed no significant difference between the two. However, numerically, students studying in class scored 13.19 higher on the *posttest results* than on the pretest. For the online group, the increase in the average score was 15.21. These findings indicate that students in the online group performed better than those in the classroom.

McCutcheon et al. (18) evaluated the impact of online or mixed learning *versus* face-to-face learning of clinical skills in undergraduate nursing education. *The systematic review* is intended to determine whether the use of an online or mixed learning paradigm has the potential to improve the clinical skills competence of undergraduate nursing students. The data used are sourced from the results of a computerized search of five *databases* with a limitation for the period 1995 - August 2013. Nineteen published research articles have been identified. Seventeen articles reported an online approach and only two articles reported a mixed approach. The synthesis of the findings focused on the following four areas: clinical performance/skills, knowledge, *self-efficacy* /clinical trust, and user experience/satisfaction. The *e-learning* interventions used varied across courses. This study found evidence that online learning to teach clinical skills is no less effective than conventional methods.

Frazer et al. (19) examined the perceptions of nursing faculty at a US university on the effectiveness of online teaching methods and quality indicators. Online teaching has been carried out but the quality needs to be evaluated. Focus groups were formed to uncover how nursing schools define and describe teaching effectiveness, as well as indicators of its quality. Data collection used a guided interview format in a semi-structured format, with the participants being nursing lecturers at the nursing faculty with an average tenure of 15 years and 6 years using the online method (n = 11). Teaching effectiveness, quality indicators, and student success are the three categories that emerged from the data analysis. The findings from the research are that online teaching is proven to be effective and meets the quality indicators.

Voutilainen et al. (20) conducted research that focused on conventional learning methods and *e-learning* in nursing education. The research was directed to determine the effect of *e-learning* on learning outcomes in nursing education and to assess the quality of *e-learning* compared to conventional learning. A systematic search was conducted on six electronic *databases* to identify research articles published between 2011 and 2015. A random effects meta-analysis was conducted to find out the mean differences of the study outcomes. In the meta-analysis, the *e-learning method* resulted in higher test scores than the conventional method.

From the studies above, it can be concluded that examining differences in the effectiveness of conventional and online learning methods can be done, but the availability of supporting research articles is still very few. Most research articles are SLRs. Similar research, in the field of nursing, especially community nursing, more specifically on the practice of the community nursing nurse at the community nursing station during the COVID-19 pandemic, was not found at all.

METHOD

Research design

This study is a quasi-experimental study using a *non-equivalent control group posttest only design*. In this study, no random determination was made to form a research group. The study used a whole group, the first class (Class A) was as a control group with the learning process of community nursing status directly in the field (in the community) as the conventional method before the COVID-19 pandemic and the second class (Class B) as an experimental group with online learning in the time of the COVID-19 pandemic. The study used one subject group, namely professional students from STIKes Santo Borromeus FY 2019/2020, which consisted of two classes. The purpose of using the *non-equivalent control group posttest only design* is to determine and compare the effectiveness of the learning process undertaken by students according to the student's own assessment, based on the criteria determined by the researcher.

Sample

The sample in this study was the entire population (*total population sampling*), namely all nursing professional students of STIKes Santo Borromeus FY 2019/2020 totaling 143 people, which

were divided into two classes, namely Class A as many as 67 people and Class B as many as 76 people. Class A for the control group and class B for the experimental group. Researchers involve entirely for research. If it is relatively not large, to avoid incompleteness of the *puzzle* , the best sampling method is *total population sampling* (21) .

Intervention Program

According to the 2015 Indonesian Nurses Education Core Curriculum, which was compiled based on the KKNi (Indonesian National Competency Framework) (22) the community nursing profession courses have a study load of 3 credits. The implementation of community nursing practice is carried out by students in groups which are placed in the area at the level of the community unit (RW). Nursing practice is carried out with group goals, with learning outcomes being able to conduct group assessments and analyze the results, and so on to show a role as a leader in managing community nursing practice.

Still in accordance with the curriculum, the learning methods for the professional practice of community nursing nurses include: pre and post conferences, individual tutorials, case discussions, and evaluation methods include: preliminary reports, community health staff reports, supervision of meetings with the community, supervision of UKS and posyandu activities, individual performance. In relation to this research, before the COVID-19 pandemic Class A (control group) was still undergoing the learning process as above, during the COVID-19 pandemic period for Class B (experimental group) the entire learning process used online. Online using media Whatsapp, Zoom, *email* , Youtube, Quizizz, Google Classroom, and Sitekad (the institution's own information system). Both the Class A and Class B community nursing stations last for 3 weeks.

Research procedure

There are 5 stages in this research which include:

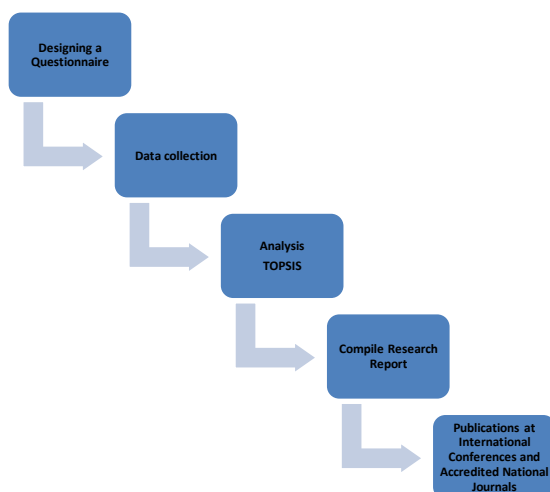


Figure 1. Research Flowchart

The first stage is the design of the questionnaire which is divided into 4 parts. The first part is to explore demographic data which includes age and gender. The second part is to ask about the learning methods that have been experienced, namely conventionally (direct guidance in the field, in the community) or online. The third part is an assessment or evaluation of the effectiveness of the learning methods followed by students, with reference to the criteria as shown in Figure 2. The fourth part focuses on the priority of each criterion.

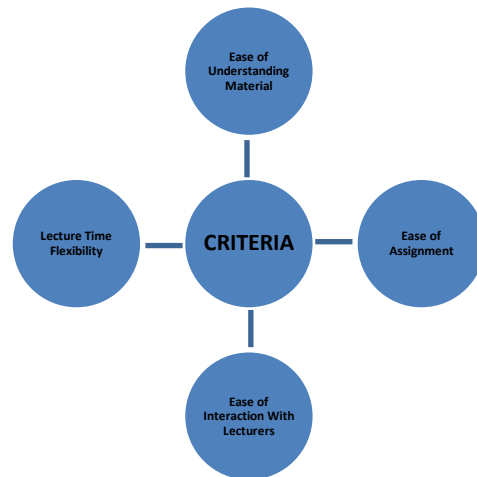


Figure 2. Criteria Design (23)

Phase II Data collection or survey. The data collection technique carried out by the researcher was using a questionnaire created on Google Forms and the link was distributed online to all students via Whatsapp and Whatsapp Group so that it did not require paper (*paperless*), could reach respondents quickly and precisely according to the research problem. Initial data collection and analysis was assisted by Google Forms by downloading Responses and saving the data in ms.excel form. Google Forms is a tool provided by Google to assist Google users in creating a survey questionnaire on the internet.

Phase III is data analysis. The analysis uses TOPSIS (*Technique for Order of Preference by Similarity to Ideal Solution*). TOPSIS is a numerical method of multi-criteria decision making. It is a method that can be widely applied with simple mathematical models. The TOPSIS method was first developed by Hwang and Yoon to solve the problem of *multiple criteria decision making* (MCDM) in 1981. Exact numbers were used to evaluate the effectiveness and weight of the importance of the criteria in the TOPSIS method (24) .

Referring to Astuti et al. (23) the stages of TOPSIS are as follows:

1. Calculating the decision normalization matrix
2. Calculating the weighted decision normalization matrix
3. Calculating the values of A+ and A-
4. Calculating the value of C+ and C-
5. Calculating the value of V which is a priority in decision making

6. Ranking the value of V

7. Conclusion

RESULTS AND DISCUSSION

The research data were analyzed using the TOPSIS method with the help of calculations in Microsoft Excel and the following is the presentation:

Table 1 TOPSIS Analysis Results

Cost or Benefit	Benefits	Benefits	Benefits	Benefits
Interest	3.75	3.40	3.90	3.87
Alternative/Criteria	Flexibility	Understand	Assignment collection	Interaction
Direct	3.8	3.6	3.85	3.8
On line	3.7	3.2	3.94	3.9
Divisor (X)	5.30194016	4.815112605	5.514523033	5.473000817
Normalization (R)	0.709400	0.750125822	0.69829181	0.6926812
	0.704807	0.661295132	0.715813208	0.7212439
Weighted	2.83759825	3.750629108	2.094875429	3.463406
	2.819226165	3.306475661	2.147439623	3.6062195
A+	2.83759825	3.750629108	2.147439623	3.6062195
A-	2.819226165	3.306475661	2.094875429	3.463406
C+	0	0	0.052564194	0.1428135
	0.018372086	0.444153447	0	0
C-	0.018372086	0.444153447	0	0
	0	0	-0.052564194	-0.1428135
Alternative	D+	D-	V	Rank
Direct	0.15	0.44	74.5%	1
Online	0.44	0.15	25.5%	2
Conclusion	The best option for learning community nursing practice is conventionally directly in the community			

As previously stated (see Figure 2), there are four criteria to be considered in making decisions which include: ease of understanding the material, ease of collecting assignments, ease of interaction with lecturers, and flexibility of lecture time. From the four criteria, it is known that the ease of collecting assignments is the most important in making decisions, the average score of interest is 3.90 and the next order is the ease of interaction with lecturers, flexibility of lecture time, and the last is the ease of understanding the material.

Table 2. Advantages and Disadvantages of Conventional and Online Nursing Learning Methods
Community Nursing Station

CRITERIA	CONVENTIONAL	ONLINE
Ease of Understanding Material	+	-
Ease of Assignment	-	+
Ease of Interaction With Lecturers	-	+
Lecture Time Flexibility	+	-

Information:

+ is an advantage

- is a drawback

Based on table 2, it can be seen that the respondents determined that the ease of understanding the learning material and the flexibility of lecture time in direct conventional learning in the community was better than the online method. However, from the aspect of ease of collecting assignments and ease of interaction with lecturers in online learning, it is more better than using conventional methods.

Based on the opinion of the respondents (still from table 2), overall it can be seen that the conventional method of learning community nursing practice directly in the community still better than the online method, which is 74.5%, while the online method is only 25.5%. These findings indicate that students are more comfortable with conventional learning than online. Students who prefer direct practice in the community are still happy with conventional methods (directly in the community) which are considered better in Ease of Understanding Materials and Flexibility of Lecture Time.

CONCLUSION

The conventional method (directly in the community) is seen as more effective by students than the online method because of the Ease of Understanding the Material and the Flexibility of Lecture Time, although the online method also has advantages in terms of ease of understanding the material

and flexibility of lecture time. If the online method is maintained it needs to be improved so that it is also better in terms of ease of understanding learning materials and flexibility of lecture time.

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REFERENCES

1. Hui DS, I Azhar E, Madani TA, Ntoumi F, Kock R, Dar O, et al. The continuing 2019-nCoV epidemic threat of novel coronaviruses to global health — The latest 2019 novel coronavirus outbreak in Wuhan, China. Vol. 91, *International Journal of Infectious Diseases*. 2020. p. 264–6.
2. WHO. Coronavirus disease 2019 (COVID-19) Situation Report – 73 Data. World Heal Organ. 2020;2019(March).
3. Zhong BL, Luo W, Li HM, Zhang QQ, Liu XG, Li WT, et al. Knowledge, attitudes, and practices towards COVID-19 among chinese residents during the rapid rise period of the COVID-19 outbreak: A quick online cross-sectional survey. *Int J Biol Sci*. 2020;16(10).
4. Mulyadi M. Partisipasi Masyarakat Dalam Penanganan Penyebaran Covid-19. *Pus Penelit Badan Keahlian DPR RI*. 2020;XII(8).
5. Hoang Ngoc Tue, Le Duc Hanh. Vocational English Teachers' Challenges on Shifting Towards Virtual Classroom Teaching. *AsiaCALL Online J*. 2021;12(3).
6. Sihombing F, Susilowati YA, Setyarini EA. Perbandingan Kepuasan Mahasiswa pada Pelaksanaan Kuis dengan Metode Konvensional dan Kahoot! Aplikasi. *J Ilm Kesehat Sandi Husada*. 2021;10(1).
7. Persatuan Perawat Nasional Indonesia (PPNI). Standar Kompetensi Perawat Indonesia. Standar Kompetensi Perawat Indones DiPublikasi Oleh Bid Organ PP-PPNI melalui; <http://www.inna-ppni.or.id>. 2005;(15).
8. Nurrahima A. Small Grup Discussion Berbasis Jejaring Sosial: Metode Pembelajaran Alternatif Bagi Mahasiswa Profesi Ners Stase Keperawatan Komunitas. In: *PENGUATAN SISTEM UJI KOMPETENSI DALAM MENINGKATKAN KUALITAS PROFESI TENAGA KESEHATAN UNTUK MEMPERKUAT DAYA SAING BANGSA DI ERA GLOBAL* [Internet]. Bandung: LPUK NAKES & UNPAD; 2017. Available from: <https://docplayer.info/52241304-Prosiding-seminar-nasional-lokakarya-uji-kompetensi-tenaga-kesehatan.html>
9. Bottino B. 9 Surprising Consequences Of The COVID-19 Pandemic. 2020; Available from:

<https://www.nurse.com/blog/2020/03/19/9-surprising-consequences-covid-19-pandemic/>

10. Tanne JH, Hayasaki E, Zastrow M, Pulla P, Smith P, Rada AG. Covid-19: How doctors and healthcare systems are tackling coronavirus worldwide. *BMJ*. 2020;368.
11. Viner RM, Russell SJ, Croker H, Packer J, Ward J, Stansfield C, et al. School closure and management practices during coronavirus outbreaks including COVID-19: a rapid systematic review. Vol. 4, *The Lancet Child and Adolescent Health*. 2020.
12. (NCSBN) NC of SB of N. Changes in Education Requirements for Nursing Programs During COVID-19. *Elsevier Lancet Child Adolesc Heal*. 2020;4(5):397–404.
13. Zayapragassarazan Z. COVID-19: Strategies for Engaging Remote Learners in Medical Education [COVID-19: Estrategias para involucrar a estudiantes a distancia en la educación médica]. *F1000Research*. 2020;(March).
14. Rose S. Medical Student Education in the Time of COVID-19. *JAMA - J Am Med Assoc*. 2020;323(21).
15. Hoffman B. Tip of the Spear: An Interview With the Washington State Nursing Care Quality Assurance Commission at the Onset of the COVID-19 Pandemic. *Teach Learn Nurs*. 2020;15(3).
16. Hakeim, E. H. A., K. F. Abdalla, O. H. Karam NAGA. E-Learning Versus Traditional Learning in Teaching Critical Care Nursing: Its Effect critical care nursing: its effect on Students' Performance. In *researchgate*; 2013.
17. Thirunarayanan MO, Perez-Prado A. Comparing Web-Based and Classroom-Based Learning. *J Res Technol Educ*. 2001;34(2).
18. Mccutcheon K, Lohan M, Traynor M, Martin D. A systematic review evaluating the impact of online or blended learning vs. face-to-face learning of clinical skills in undergraduate nurse education. *J Adv Nurs*. 2015;71(2).
19. Frazer C, Sullivan DH, Weatherspoon D, Hussey L. Faculty Perceptions of Online Teaching Effectiveness and Indicators of Quality. *Nurs Res Pract*. 2017;2017.
20. Voutilainen A, Saaranen T, Sormunen M. Conventional vs. e-learning in nursing education: A systematic review and meta-analysis. Vol. 50, *Nurse Education Today*. 2017.
21. Etikan I. Comparison of Convenience Sampling and Purposive Sampling. *Am J Theor Appl Stat*. 2016;5(1).
22. (AIPNI) AIPNI. Kurikulum Inti Pendidikan Ners Indonesia 2015. Jakarta: Asosiasi Institusi Pendidikan Ners Indonesia (AIPNI); 2016.
23. Astuti CC, Sari HMK, Azizah NL. Perbandingan Efektifitas Proses Pembelajaran Menggunakan Metode E-Learning dan Konvensional. *Proc ICECRS*. 2018;2(1).
24. Celik P, Caylak M. The Evaluation Of Effectiveness Of Online Marketing Tools DMO's (Destination Management Organization) Websites By Fuzzy Topsis Method. In: 2015 [Internet]. Amsterdam: ISERD; Available from:

https://www.researchgate.net/publication/291161738_The_Evaluation_of_Effectivness_of_Onli
[ne_Marketing_Tools_Dmos_Destination_Management_Organization_Websites_by_Fuzzy_Top](https://www.researchgate.net/publication/291161738_The_Evaluation_of_Effectivness_of_Onli)
[sis_Method.](https://www.researchgate.net/publication/291161738_The_Evaluation_of_Effectivness_of_Onli)