Geosfera Indonesia
p-ISSN 2598-9723, e-ISSN 2614-8528
available online at : https://jurnal.unej.ac.id/GEOSI/index
Vol. 9 No. 3, December 2024, 376-393

https://doi.org/10.19184/geosi.v9i3.4402 Research Article

Measuring Geography Online Learning in The First Year Using The Online Learning Quality Index Based on Teachers and Learners' Perceptions (OLQ-TLP)

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ARTICLE INFO

Received :
15 September 2023

Revised :
21 November 2024

Accepted :
27 November 2024

Published :
27 December 2024

ABSTRACT
Online learning is a relatively new thing for some teachers in South Kalimantan. It was the first time for these teachers to do online learning since the government took the policy of learning from home due to the disaster emergencies and environmental change. This study aims (1) to determine the perception of geography teachers in South Kalimantan who have just done online learning for the first time, and (2) to determine the quality of online learning that has been implemented based on the mean index value of each factor. The research was designed with a quantitative approach through an online survey of 26 geography teachers who teach 10th grade at the high school level. The sample was selected by Cluster Random Sampling. The questionnaire instrument used a modified the online learning quality index based on teachers and learners' perceptions (OLQ-TLP). The research time was from December 2020 to February 2021. The results showed that teachers' perceptions of online learning were in a good category. Based on the index value, factors that have good quality are Learner content, Learner interaction, Instruction interaction, Social Presence, and Course design. Other factors still need to be improved, namely the factors of Learner satisfaction, Knowledge acquisition, Learning platform, Instruction, Learning support, and Ability of transfer. Therefore, to improve teachers' expertise in online geography learning on lithosphere material, training with an innovative Digital Education Shifting (DES) approach is needed.

Keywords: Perception; Quality; Online Learning; Geography Teacher

INTRODUCTION

The challenges of face-to-face learning and online learning are different. Especially when schools and teachers are suddenly forced to change their way of learning (Cabangcala et al., 2021). One of the changes in learning methods is influenced by disaster emergency factors. Disaster events and environmental changes can cause disruption to the offline learning process, so the learning process experiences adjustments from offline to online (Berger et al., 2018; Nguyen & Minh Pham, 2018; Rush, 2018; Segarra-Alméstica et al., 2022; Farzanegan et al., 2024; Giday & Perumal, 2024; Wang, 2024). The change from offline to online learning is the first online learning experience for most teachers in developing countries like Indonesia. A teacher's experience is very important in managing online classes (Prasojo et al., 2017). Especially when

learning physical geography materials such as lithosphere topics. There are many obstacles in learning lithosphere online (Ritter, 2012). Misconceptions still often occur when learning this topic (Dove, 2016). Students' activeness in utilizing technology greatly affects the implementation of online learning (Bose, 2014). Online learning has the potential for students to obtain a variety of information, but they need to validate the truth of the information they obtain (Oktavianto, 2021). Rahman et al. (2023) showed that three factors-challenges and difficulties of online learning, effectiveness of online learning, and students' motivation towards online learning-have a great impact on how students perceive online learning. The barriers mentioned above need to be seen from the teacher's perspective/teacher perception.

Teacher perception is formed from various factors. The first factor is the experience teachers have, the second is the level of education and teaching certificate, the third factor that influences teacher perceptions is the location of the school, then the learning culture inherent in the community, facilities such as the availability of electricity and internet signals, and the level of student confidence (Gómez-Rey et al., 2016; 2016a; Gurley, 2018; Aguliera & Nightengale-Lee, 2020; Rusli et al., 2020; Oktavianto et al., 2021). However, the factors that influence teachers' perceptions of online learning in detail have not been widely studied.

Teachers' perceptions of online geography learning of listosphere material are important to be revealed. This is because the perception that is formed certainly determines the learning strategy chosen by the teacher. It can also be used as a measure of the quality of learning that has taken place. Gómez-Rey et al. (2016) found that the perceptions of teachers and students can be used as a measure of the quality of online learning that has been implemented. The concept of online learning perception comes from the attitude towards learning with computers and the internet (Wei & Chou, 2020). The perceptions conveyed by teachers are certainly based on the background and experience of each teacher. Perceptions of online learning can be measured using the online learning quality index based on teacher and learner perceptions (OLQ-TLP) which consists of 11 factors, namely Learning Support, Social Presence, Instruction, Learning platform, Instructor Interaction, Learner Interaction, Learner Content, Learner Design, Learner satisfaction, Knowledge acquisition, and Ability of transfer (Gómez-Rey et al., 2016).

Online learning of lithosphere geography material still experiences several obstacles. Azizah et al. (2021) found that geography teachers in North Banjarmasin District used 71% of online applications, but not 100%. A study at SMA Muhammadiyah 3 Jember showed that geography teachers still experience obstacles in online learning (Rahmadianto et al., 2022). Pasaribu et al. (2023) found barriers in online geography learning at SMA Negeri 2 Balige. Some previous researchers still focus on environmental conditions such as electricity and signal availability which are obstacles in online learning, so the opportunity for novelty in this study is to reveal teacher perceptions in online learning on lithospheric material. Therefore, this study aims to determine the perceptions of geography teachers in South Kalimantan regarding online learning on lithosphere material that they have gone through. From the teacher's perception, it can also be analyzed regarding the quality of learning carried out. This is because the instrument used, namely the online learning quality index based on teachers and learners' perceptions (OLQ-TLP), has the ability to measure the quality index of online learning through teacher perceptions.

METHODS

Research Design

This study employed a quantitative approach using an online survey method. The survey targeted geography teachers in South Kalimantan teaching grade XI in public senior high schools, conducted from December 2020 to February 2021, chosen to coincide with their experience in online teaching on the lithosphere topic. Cluster random sampling was utilized, a technique suitable for large populations across regions (Sugiyono, 2012). Data analysis involved the Kaiser-Meyer-Olkin (KMO) and Measure of Sampling Adequacy (MSA) tests. The KMO test assesses the suitability for factor analysis, with values ranging from 0 to 1; a KMO value below 0.5 indicates that factor analysis is not appropriate, while a value above 0.5 suggests it is feasible. The MSA test evaluates the adequacy of each variable, requiring an MSA value above 0.5 for further analysis. Values below this threshold necessitate variable elimination (Hair Jr. et al., 2019). The research

findings were presented through a quantitative descriptive analysis, which involves statistically summarizing and presenting the relevant constructs and their relationships.

The research focused on the shift from offline to online learning methods prompted by disaster emergencies and environmental changes. These disasters encompass natural, non-natural, and social events. Additionally, environmental factors influencing learning methods include physical changes, like climate change, and socio-cultural shifts, such as advancements in technology. Online learning policies can significantly impact learning quality. To assess this quality, data on teacher perceptions are collected using the Online Learning Quality Index based on the perceptions of both teachers and learners (OLQ-TLP), as outlined by Gomez-Rey et al. (2016). The collected data is then analyzed using the Kaiser-Meyer-Olkin (KMO) and Measure of Sampling Adequacy (MSA) methods, leading to conclusions about the quality of online learning for geography topics related to lithosphere material in Southern Kalimantan.

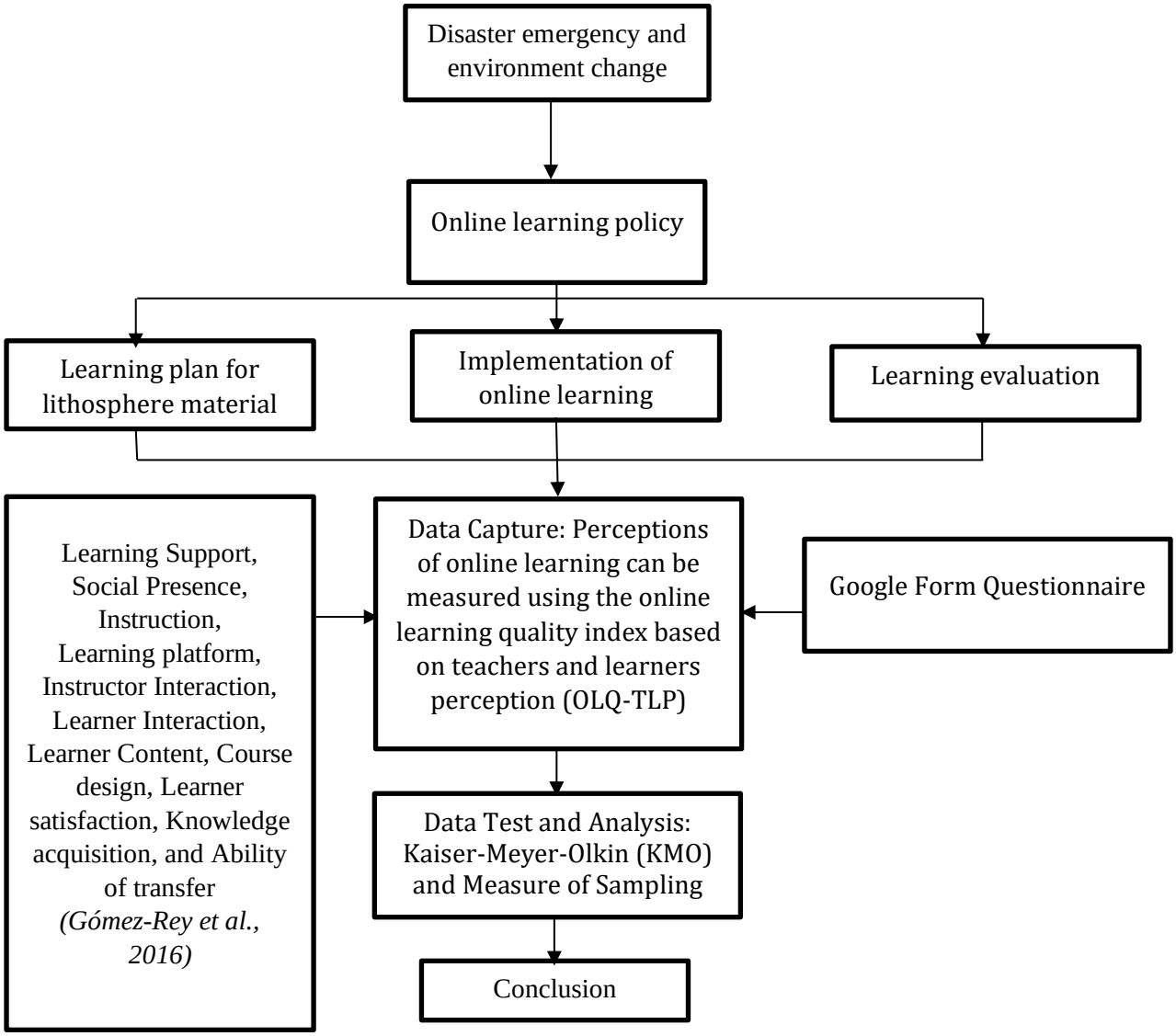

Figure 1. Research flowchart

Sample

The sample was taken using Cluster Random Sampling. Geography teachers in South Kalimantan Province from 13 districts/cities were used as the research population. The existing districts/cities are clusters, and then each district/city randomly selected two geography teachers who teach grade 10. A total of 26 geography teachers from 26 schools

were sampled. Furthermore, a number of these samples were contacted via WhatsApp and asked for their willingness to fill out the questionnaire. All teachers contacted were willing to be sampled for this research.

Table 1. Sample

Teacher Data Type	Category	Percentage (%) (N=26)
Gender	• Female	69.2%
	• Male	30.8%
Last Education	• Bachelor's degree	65.4%
	• Master's Degree	34.6%
Period of Employment	• 0-5 Year	11.54% (3)
	• 6-10 Year	19.23% (5)
	• 11-15 Year	34.61% (9)
	• 16-20 Year	23.08% (6)
	• More Than 20 Year	11.54% (3)

Instrument

The questionnaire was developed using Google Forms and tailored for the teacher perception survey based on the Online Learning Quality Index based on teachers and learners' perceptions (OLQ-TLP) established by Gómez-Rey et al. (2016). The researcher modified the questionnaire to align with the specific learning conditions in the study area. It retained the factors from the OLQ-TLP, including Learning Support, Social Presence, Instruction, Learning Platform, Instructor Interaction, Learner Interaction, Learner Content, Course Design, Learner Satisfaction, Knowledge Acquisition, and Ability to Transfer (Gómez-Rey et al., 2016b). The instrument comprised 41 questions, each offering four response options based on a Likert scale: Very Suitable (SS) scored 4, Suitable (S) scored 3, Less Suitable (KS) scored 2, and Not Suitable (TS) scored 1.

Validation and reliability tests of existing instruments need to be conducted. This is because this instrument has never been used before on senior high school teachers in Indonesia. Validation and Reliability using Pearson Correlation Test and Cronbach's Alpha with the help of SPSS 24 for Windows. The validation value of each factor can be seen in Table 2.

Table 2. Validation value of each factor

Factor	Pearson Correlation	Sig.
Learning Support	0.875	0.000
Social Presence	0.663	0.000
Instruction	0.661	0.000
Learning Platform	0.691	0.000
Instructor Interaction	0.661	0.000
Learner Interaction	0.685	0.000
Learner Content	0.691	0.000
Course design	0.652	0.000
Learner satisfaction	0.685	0.000
Knowledge acquisition	0.744	0.000
Ability of transfer	0.721	0.000

Table 2. shows that each factor and item can be declared valid. The reliability value of the 41 items measured by Cronbach's Alpha is 0.983, so it is stated that the instrument used is reliable. From the validation and reliability test values obtained, it means that this instrument can

be used to determine the perceptions of high school geography teachers in online learning and the quality of learning.

The limitation of this study is that the research population is still at the level of the province of South Kalimantan, so it has not become a general conclusion. The research location is considered to tend to be homogeneous, so the findings of the research results do not yet describe the location factor as an influence on teacher perceptions. In addition, the limitation of this research is that the data collection method is still a google form questionnaire, so that to find out teacher perceptions in more detail, in-depth interviews are needed. The next research limitation is that the sample used is still limited to teachers, not involving students. So, further research opportunities can involve teachers and students, as well as research locations in several provinces and / or throughout Indonesia.

RESULTS

This study measures teachers' perceptions and the quality of online learning by analyzing eleven factors. The eleven factors were tested using Kaiser-Meyer-Olkin (KMO) and Measure of Sampling Adequacy (MSA) to determine their level of influence on perception. As for the quality of learning, it is seen from the index value of each factor used in this research. The value of Kaiser-Meyer-Olkin (KMO) obtained from factor analysis which is operational using SPSS 24 is 0.921. Bartlett's Test value shows the number 0.000. The MSA value of each factor studied can be seen in Table 3.

Table 3. Measure of Sampling Adequacy (MSA) values

Factor	MSA
Learning Support	0.908
Social Presence	0.921
Instruction	0.910
Learning Platform	0.919
Instructor Interaction	0.923
Learner Interaction	0.926
Learner Content	0.947
Course design	0.897
Learner satisfaction	0.957
Knowledge acquisition	0.921
Ability of transfer	0.896

From the two-factor analysis tests that have been conducted, it can be stated that eleven factors can influence teachers' perceptions of online learning and can be used as a measure of the quality of online learning in geography subjects in South Kalimantan. These influences in order are as follows; (1) Learner satisfaction, (2) Learner content, (3) Learner interaction, (4) Instructor interaction, (5) Social Presence, (6) Knowledge acquisition, (7) Learning platform, (8) Instruction, (9) Learning Support, (10) Course design, and (11) Ability of transfer.

Learner Satisfaction

Learner satisfaction is a factor in online learning that geography teachers in South Kalimantan consider to be the most important. In this section, the questions in the questionnaire aim to explore teachers' perceptions of learner satisfaction. Respondents could answer with **'strongly agree' (SA), 'agree' (A), 'less agree' (LA), or 'disagree' (D).** A higher mean score indicates that the teacher agrees with the statement, and conversely, a low mean score indicates teacher disagreement. Other factors also use this criterion.

Table 4. Learner Satisfaction

No	Learner Satisfaction	SA (4)	A (3)	LA (2)	D (1)	Mean
LS 1	Learners seem motivated to do well in the learning.	3 (11.5%)	14 (53.8%)	7 (26.9%)	2 (7.7%)	2.69
LS 2	Regardless of learners' expected grades in this subject, it is a useful learning experience.	10 (38.5%)	13 (50%)	1 (3.8%)	2 (7.7%)	3.19
LS 3	Learners will likely recommend/advise others to study geography.	4 (15.4%)	13 (50%)	7 (26.9%)	2 (7.7%)	2.73
LS 4	Students learn from the activities assigned in the lesson.	7 (26.9%)	12 (46.2%)	6 (23.1%)	1 (3.8%)	2.96
LS 5	The learning of the lithosphere material is relevant to learners' needs.	13 (50%)	10 (38.5%)	1 (3.8%)	2 (7.7%)	3.31
	Average Mean (Factor Index Values)					2.98

Teachers' perception of learner satisfaction shows that teachers in South Kalimantan believe that the topic of lithosphere is very relevant to their needs with a score of 3.31 (LS5). Because the topic of the lithosphere is also related to the physical conditions of the environment where teachers and students live. Therefore, the topic of the lithosphere is relevant to the needs of students. For example, recognizing rocks, soil in the environment where they live so that they know the potential that is owned in the environment. However, this study shows that the quality of activities indicated by the LS4 statement, the teacher expressed disagreement with a mean value of 2.96. This shows that online learning activities still need to be done with better planning. Statement LS2 is related to the usefulness of learning. Teachers agree that after doing activities on the topic of lithosphere, students will get benefits. This is indicated by a score of 3.19. However, in this section, learner satisfaction still does not satisfy teachers related to learner motivation (LS1) which only shows a score of 2.69. Geography teachers in South Kalimantan still need to make better efforts to increase students' motivation.

Learner Content

The content available to learners allows them to learn hard if they feel that what is in the material matches what they expect. Vice versa, if the content presented is not appropriate, it will make learners easily bored and even reluctant to take part in the learning process. The results showed that 50% of teachers stated that the content was appropriate, and 30.8% stated that it was very appropriate. The results also show that teachers have organized the content according to the learning objectives (LC2) with an average score of 3.19. Teachers also believe that the content can stimulate learners with a score of 3.08 on LC3.

Table 5. Learner Content

No	Learner Content	SA (4)	A (3)	LA (2)	D (1)	Mean
LC 1	Lithosphere material content is presented at an appropriate level for learners.	8 (30.8%)	13 (50%)	2 (7.7%)	3 (11.5%)	3
LC 2	Content is relevant to the learning objectives.	10 (38.5%)	13 (50%)	1 (3.8%)	2 (7.7%)	3.19
LC 3	Content stimulates learners	7 (26.9%)	16 (61.5%)	1 (3.8%)	2 (7.7%)	3.08
	Average Mean (Factor Index Values)					3.09

Content must indeed be designed in detail and sequentially from beginning to end so that the discussion of the lithosphere will be interesting and easily captured by students. However, the facts in the field are not 100% that the content presented is not in accordance with the

discussion of the lithosphere. Therefore, there needs to be special training for teachers to create interesting content, in accordance with learning topics and not plagiarize other people's content.

Learner Interaction

Learner interaction is not only with the teacher but also with other learners who are both learning online. Online discussion (LI1) exists in most platforms used by geography teachers in South Kalimantan. This is shown by 50% of teachers strongly agreeing and 34.6 agreeing. Interaction in the form of online discussion plays an important role in online learning during the pandemic. Geography teachers in South Kalimantan realize that online discussion between students is an important part of learning, so it is very necessary to have these activities during online learning.

Table 6. Learner Interaction

No	Learner Interaction	SA (4)	A (3)	LA (2)	D (1)	Mean
LI 1	In the platform I use. there are suggestions for online discussions.	13 (50%)	9 (34.6%)	2 (7.7%)	2 (7.7%)	3.27
LI 2	Online comments by other participants help learners learn	11 (42.3)	9 (34.6%)	5 (19.2%)	1 (3.8%)	3.15
LI 3	Learners contribute to the learning environment by responding to their peers	2 (7.7%)	16 (61.5%)	6 (23.1%)	2 (7.7%)	2.69
LI 4	Learners learn to respect other points of view.	6 (23.1%)	15 (57.7%)	4 (15.4%)	1 (3.8%)	3
Average Mean ((Factor Index Values)						3.27

Learners who worked collaboratively had significantly higher achievement than learners who worked individually. This study also found that learners learn to respect other learners' opinions during online learning. This is shown by 57.7% of teachers who agreed with the online learning and even 23.1% strongly agreed. So the role of the teacher becomes important in managing the online interactive learning process. How teachers are able to divide learners into groups for discussion, then create their own discussion room for each group, given a time limit for discussion, then present the results of the discussion. Such skills must be possessed by teachers today.

Instructor Interaction

Both synchronous and asynchronous online learning require teacher readiness. Teachers must be fully prepared to implement online learning, by always being “online” especially when deciding to do synchronous online learning. Feedback is a very important communication in online learning, besides, classical and individual guidance is also needed during online learning. In terms of feedback, teachers have done well, this is shown by the high average score of 3. Communication from teachers is believed to be the key to success in online learning. Statement II3 about guidance also shows that 38.5% teachers agree with this statement, even 38.5% teachers strongly agree.

Table 7. Instructor Interaction

No	Instructor Interaction	SA (4)	A (3)	LA (2)	D (1)	Mean
II 1	I return all assignments with useful feedback for learners.	9 (34.6%)	11 (38.5%)	3 (11.5%)	3 (11.5%)	3
II 2	I return all assignments with useful feedback for learners.	15 (57.7%)	8 (30.8%)	1 (3.8%)	2 (7.7%)	3.38
II 3	I return all assignments with useful feedback for learners.	10 (38.5%)	11 (38.5%)	3 (11.5%)	2 (7.7%)	3.11
	Average Mean (Factor Index Values)					3.16

Teacher communication is important because the communication style and culture of learners is now much different. Teachers must be careful in communicating with students. Teachers must be able to organize good sentences, and maintain intonation of tone so that students are not pressured. Because, good communication will also form a good relationship between teachers and students. If the communication between teachers and students goes well, then the learning material can also be delivered optimally.

Social Presence

A sense of togetherness in online learning has been built by geography teachers in South Kalimantan. This is shown by 92.3% of teachers who stated so. Teachers have also encouraged students to be actively involved in online learning, through various ways. This can be seen from 64.5% of teachers who stated that they encourage their students to play an active role. Another thing that teachers need to do is to have a sense of concern for disaster emergency and environmental change, so that students can also accept the fact that they have to learn online. This has been done by geography teachers in South Kalimantan with an average score of 3.07 stating that they expressed their concern. The teachers have also encouraged learners to actively participate with an average score of 3.54. Even in terms of encouraging learners, 65.4% of teachers strongly agreed with what they had done.

Table 8. Social Presence

No	Social Presence	SA (4)	A (3)	LA (2)	D (1)	Mean
SP 1	Learners know that I (the teacher) am concerned about their needs as learners during the pandemic.	11 (42.3%)	8 (30.8%)	5 (19.2%)	2 (7.7%)	3.07
SP 2	Learners know that I (the teacher) am concerned about their needs as learners during the pandemic.	17 (65.4%)	7 (26.9%)	1 (3.8%)	1 (3.8%)	3.54
SP 3	Learners know that I (the teacher) am concerned about their needs as learners during the pandemic.	8 (30.8%)	16 (61.5%)	1 (3.8%)	1 (3.8%)	3.19
	Average Mean (Factor Index Values)					3.27

This sense of togetherness needs to be formed and nurtured so that teachers and learners have the same understanding of disaster emergencies and environmental change. Teachers must instill a sense of care that humans live on the same earth, so it needs awareness and mutual care to take care of it. Then teachers can also explain the various potentials that will occur during disaster emergencies and environmental changes for the world of education, so that teachers and students become resilient in any condition.

Knowledge Acquisition

Online learning, which is the first time conducted by geography teachers, is believed to affect students' knowledge acquisition. Teachers who usually plan learning to equip learners' knowledge face-to-face, must be able to change it to virtual learning. Teachers feel that learners also have difficulty adapting to these changes. This is shown by the data on the knowledge acquisition factor in Table 9.

Table 9. Knowledge acquisition

No	Knowledge acquisition	SA (4)	A (3)	LA (2)	D (1)	Mean
KA 1	Learners do/do tasks and tests well.	4 (15.4%)	15 (57.7%)	5 (19.2%)	2 (7.7%)	2.81
KA 2	Learners can explain the lithosphere content covered in this lesson to others.	3 (11.5%)	15 (57.7%)	6 (23.1%)	2 (7.7%)	2.73
KA 3	I have noticed the difference between learners' pre- and post-learning knowledge of the lithosphere.	5 (19.2%)	15 (57.7%)	4 (15.4%)	2 (7.7%)	2.88
KA 4	During the learning, learners are aware of their strengths and weaknesses in learning about the lithosphere.	0 (0%)	14 (53.8%)	10 (38.5%)	2 (7.7%)	2,46
KA 5	Learners can make the right decisions and solve problems with the knowledge they gained in this lesson.	1 (3.8%)	17 (65.4%)	7 (26.9%)	1 (3.8%)	2.69
	Average Mean (Factor Index Values)					2.71

With an average score in KA 1 on tasks and tests of 2.81, it shows that teachers are not confident that learners can do tasks and tests well. The most obvious thing seen in this knowledge acquisition factor is that no teacher (0%) strongly agreed that their learners can realize their strengths and weaknesses in learning lithosphere online. Improving knowledge acquisition during online learning is still a challenge for teachers.

Learning platform

A learning platform can be used to store materials that learners need to learn as well as a means of learner activity during online learning. Realizing the importance of this, geography teachers in South Kalimantan build a platform that can do this. This is shown from the mean which has a value of 3.08 regarding the statement about LP1. Although there are many learning platforms spread in cyberspace, teachers must improve their skills to create learning platforms that have special uniqueness. So that teachers will be more creative and not be shackled by other people's learning platforms. So that teachers are truly independent in learning to create a platform to accommodate each lithosphere discussion. In addition, at least the material uploaded by the teacher on the platform can be compared with the material spread on the internet. This also teaches students about the truth of information.

Table 10. Learning Platform

No	Learning Platform	SA (4)	A (3)	LA (2)	D (1)	Mean
LP 1	All important content in the lithosphere material is easy to find in the platform that I use during learning.	8 (30.8%)	14 (53.8%)	2 (7.7%)	2 (7.7%)	3.08
LP 2	The platform provides a clear way to get technical assistance in case of technical problems/concerns.	5 (19.2%)	17 (65.4%)	2 (7.7%)	2 (7.7%)	2.96
LP 3	The media technology used is appropriate for the lithosphere material.	6 (23.1%)	15 (57.7%)	3 (11.5%)	2 (7.7%)	2.96
	Average Mean ((Factor Index Values)					2.71

Teachers choose technology media that is suitable for lithosphere material, this is stated with a mean of 2.96 in the LP3 statement. In addition, the teacher has also provided technical assistance in the platform he made, so that it can help students when technical problems occur. This is because there is no face-to-face learning, so all kinds of technical assistance must be prepared in the platform used as an online learning class. Most of the teachers there have realized and prepared this for the implementation of quality learning.

Instruction

Changing the way of teaching from offline to online due to disaster emergency factors or environmental changes actually has benefits. The benefit of online learning is flexibility that allows teachers and students to carry out the learning process anytime and anywhere. However, for the material of the listosphere has its own challenges for online learning because the subject matter is about physical phenomena on the earth's surface. This should be overcome by mastery of the material and pedagogical competence of geography teachers in South Kalimantan. However, on this Instruction factor, the results have not shown what is expected.

Table 11. Instruction

No	Instruction	SA (4)	A (3)	LA (2)	D (1)	Mean
I 1	I have used effective teaching strategies.	3 (11.5%)	17 (65.4%)	5 (19.2%)	1 (3.8%)	2.85
I 2	I have conducted learning with consideration from various perspectives.	4 (15.4%)	18 (69.2)	2 (7.7%)	2 (7.7%)	2.92
I 3	I have extensive knowledge of the geography subject matter of the lithosphere.	3 (11.5%)	17 (65.4%)	4 (15.4%)	2 (7.7%)	2.81
Average Mean ((Factor Index Values)						2.86

Table 11 shows that geography teachers in South Kalimantan are not convinced that the strategies used are effective. This is indicated by an average score of only 2.81. It is also evident that the implementation of online learning is the first experience for some teachers. However, the situation between face-to-face and online learning is not the same. Even geography teachers are not all confident that they have mastered the lithosphere material extensively, with an average of 2.81.

Learning Support

Learning support in the online learning process includes the availability of electricity, devices and internet. The internet is something that some teachers and learners may already be familiar with. However, geography teachers in South Kalimantan still believe that an online learning guide should be created. This is a form of support for successful online learning. Guides are a form of support from teachers to learners that should be available on various online learning platforms.

Table 12. Learning Support

No	Learning Support	SA (4)	A (3)	LA (2)	D (1)	Mean
LS 1	Teachers or Schools create study guides according to the platform (Google Classroom, Moodle, or others) used during learning during the pandemic.	15 (57.7%)	6 (23.1%)	1 (3.8%)	4 (15.4%)	3.2
LS 2	Learners have received adequate training in the use of the platform.	5 (19.2%)	5 (19.2%)	12 (46.2%)	4 (15.4%)	2.6
LS 3	Learners have access to adequate tools and resources to learn in this course.	3 (11.5%)	4 (15.4%)	10 (38.5%)	9 (34.6%)	2.9
LS 4	Learners have received the technical support they need when facing problems (Internet Quota, Signal, etc.).	2 (7.7%)	3 (11.5%)	13 (50%)	8 (30.8%)	3
Average Mean (Factor Index Values)						2.92

Unfortunately, most teachers do not provide adequate training in the use of learning platforms. Statement LS2 shows a mean value of 2.6 which means that in terms of providing training to learners in the utilization of learning platforms is still at a low level. Training on the use of various online learning applications is necessary for learners. In addition, it must also be ascertained whether learners have access to devices, and of course the presence of internet signals in the place of learners also needs to be considered. This is because in access to tools and resources (LS3), most teachers stated that their learners could be said to have no access (no devices or signal constraints). Most teachers also stated that learners did not get technical support for the obstacles they faced (LS4).

Course Design

Online learning implemented by geography teachers in South Kalimantan has mostly contained learning objectives. With an average score of 3.19 regarding learning objectives (CD1), it means that the quality of learning design that has been designed by geography teachers in South Kalimantan is good. This needs to be considered by teachers who conduct online learning, and the design must also include learning procedures.

Table 13. Course design

No	Course design	SA (4)	A (3)	LA (2)	D (1)	Mean
CD 1	These learning objectives are reflected in the learning activities.	9 (34.6%)	14 (53.8%)	2 (7.7%)	1 (3.8%)	3.19
CD 2	The subject matter is presented in an interesting and relevant manner for future application.	9 (34.6%)	11 (42.3%)	2 (7.7%)	4 (15.4%)	2.96
CD 3	Assessment is conducted by the learning objectives, learning activities, and the application of resources during the pandemic.	6 (23.1%)	15 (57.7%)	3 (11.5%)	2 (7.7%)	2.96
Average Mean (Factor Index Values)						**3.04**

Online learning design must also be tailored to the needs of each subject matter. It also needs to be adjusted to the learning technology used. Learning design must be sequential with various anticipations in it, such as solutions for students who experience problems, learning objectives and procedures.

Ability to transfer

Online learning is considered by some as a solution for knowledge transfer from teachers to learners. However, online learning in South Kalimantan is not. This can be seen from the average numbers of the five statements regarding the transferability factor, none of which reached an average number of 3. Of the eleven factors, this factor does not look encouraging, at least this is what we can see from teachers' perceptions.

Table 14. Ability of transfer

No	Ability of transfer	SA (4)	A (3)	LA (2)	D (1)	Mean
AT 1	Learners know how to use knowledge of Lithospheric Materials in new situations and locations.	1 (3.8%)	16 (61.5%)	5 (19.2%)	4 (15.4%)	2.54
AT 2	Learners have the opportunity to apply the knowledge they learn.	2 (7.7%)	17 (65.4%)	5 (19.2%)	2 (7.7%)	2.73
AT 3	Learners have the opportunity to apply the knowledge they learn.	3 (11.5%)	16 (61.5%)	3 (11.5%)	4 (15.4%)	2.69
AT 4	Learners have the opportunity to apply the knowledge they learn.	3 (11.5%)	16 (61.5%)	5 (19.2%)	2 (7.7%)	2.77
AT 5	Learners have the opportunity to apply the knowledge they learn.	4 (15.4%)	14 (53.8%)	4 (15.4%)	4 (15.4%)	2.69
Average Mean (Factor Index Values)						**2.68**

Transferability refers to the anticipation that students will use the knowledge gained from the course in future situations. It involves understanding new information to apply it in various contexts, promoting deeper learning through collaboration to solve problems and interpret future experiences. However, in South Kalimantan, teachers have not fully developed these transfer skills, highlighting the need for enhanced training in online learning for educators in the region.

DISCUSSION

From the research and discussion presented, it can be concluded that the eleven factors in the Online Learning Quality Index based on teacher and learner perceptions (OLQ-TLP) influence teacher perceptions. Geography teachers view online learning positively. By analyzing the index values of each factor, a clearer picture of the quality of online geography education provided by teachers in South Kalimantan emerges. However, this study did not include student perceptions, limiting its ability to draw broad conclusions about the views of both teachers and students in online learning contexts.

The online learning experience in South Kalimantan still faces challenges for both teachers and students, particularly for the latter. Students encounter numerous difficulties in online learning. Wang et al. (2021) suggested that teachers should focus on specific areas to enhance students' learning experiences, including providing macro-level feedback on subjects, designing effective instructional methods, offering formative feedback on assignments and discussions, and fully leveraging technological tools in their teaching.

The constraints of the online learning process are also still experienced by teachers in South Kalimantan. Some of the constraints that teachers have can be seen in the 11 components of teacher perceptions whose scores have not met the target to be categorized as very good. Some of the obstacles experienced by teachers in online learning on the subject of the lithosphere are influenced by several factors and need to find alternative solutions so that online learning can run optimally. The first obstacle the findings show that the online learning planning of teachers in South Kalimantan on the subject of the lithosphere has not been done well. Therefore, teachers must quickly improve their skills to adjust to the demands of online learning. Lee et al. (2018) showed that learning materials or topics are part of the quality of content. This means that the quality of teachers is tested in compiling lithosphere topics. If the topic prepared by the teacher about the lithosphere is good, so that this topic is favored by students.

The second challenge faced by teachers in South Kalimantan regarding the lithosphere subject is content creation. The materials developed for online learning on lithosphere topics do not meet expectations. Effective content is crucial for successfully conveying knowledge and values related to lithospheric material. According to Xiao (2017), the content provided to learners is vital for ensuring the effectiveness of online education. The third challenge for geography teachers in South Kalimantan is the ability to facilitate online class discussions. Addressing this issue is essential, as interaction between teachers and students, as well as among students themselves, can enhance the learning experience and optimize the transfer of knowledge and values. The significance of improving discussion facilitation methods is supported by Kurucay and Inan (2017), who found that student-to-student interaction significantly impacts learning outcomes in online courses. Furthermore, research by Oyarzun et al. (2018) indicated that interactions designed to foster high levels of collaboration positively influence learner satisfaction and achievement.

The fourth obstacle that teachers still need to overcome is how to communicate. Communication must be well established between teachers and students. Teachers not only convey lithospheric material, but teachers must also be able to communicate problem solving from problems that occur in the environment in relation to the material of the listosphere. In addition, the teacher must also be able to compose good sentences, the intonation of the tone of words is maintained. So that the communication between teachers and students becomes professional and optimal. The ability to communicate well in this online learning process is needed to build engagement with students (Martin & Bolliger, 2018). In addition, teachers play an important role in building relationships and online learning climate (Kaufmann & Vallade,

2020). Fifth, fostering a professional sense of community. This means that teachers and learners must have a high sense of solidarity but still have rules. So that between teachers and students but able to maintain the dignity of each other. Professional togetherness must be owned by teachers and taught to students. Because social presence is very important in online learning, especially for those who have low learning awareness (Andel et al., 2020). This sense of caring is needed because of social friendliness during online learning so that the learning environment becomes comfortable (Weidlich & Bastiaens, 2019). Therefore, if there are learners who experience problems or delays in receiving the material, the teacher can provide extra explanations and other learners do not feel annoyed because the learning material is not useful.

Improving knowledge acquisition during online learning remains a sixth challenge for teachers. The results show that teachers are not confident that learners can do well on assignments and tests. The most obvious thing that can be seen in this knowledge acquisition factor is that no teacher strongly agreed that their learners can realize their strengths and weaknesses in learning lithosphere online. Therefore, teachers must be able to measure each learner's ability and psychological condition one by one, because learners acquire knowledge gradually from fragmentary information to complete and integrated information (MacEachren, 1992). The psychological response has a significant influence on the knowledge gained by learners during online learning (Xie et al., 2020). Seventh, the skill in creating an online learning platform has not been tested. Geography teachers in South Kalimantan on the subject of lithosphere still use learning platforms available on the internet. So that lithosphere material is fixated according to what is in cyberspace, so that teachers are less tested in making online learning platforms for lithosphere material. Teachers must be able to create their own platform, to show geographical phenomena in the form of a lithosphere that is unique and different from other environments. The importance of creating a learning platform by teachers is emphasized by Kim et al. (2020) that in online learning, although the material is widely spread on the internet, the role of teachers in creating learning platforms is still important. The eighth obstacle faced by geography teachers in South Kalimantan is that online learning is the first experience. So that geography teachers in South Kalimantan are still in the transition stage from offline to online, plus that the subject matter of lithosphere material is about the physical environment on the earth's surface so it becomes even more difficult for teachers to explain online compared to direct practice in the field. Moving teaching online can allow the flexibility of teaching and learning anywhere, anytime, but the speed of the move to online teaching due to non-natural disasters is staggering and most teachers are not prepared (Hodges et al., 2020). Therefore, there are alternatives to overcome the obstacles of learning instruction for lithospheric materials, namely there are three important principles in learning instruction: reducing unimportant processing, managing important processing, and encouraging generative processing (Mayer, 2019). These three principles can be summarized to effectively manage instruction.

The ninth challenge teachers face is the low level of training for students in using learning platforms. Lee et al. (2011) recommend that teachers clearly communicate the available support types and offer straightforward ways for students to access it. This is crucial for effectively delivering lithosphere content, as inadequate use of online platforms can hinder the achievement of learning objectives. The tenth obstacle for geography teachers in South Kalimantan involves aligning learning designs with educational goals. Online learning design encompasses not just the structure but also the processes and procedures involved (Martin et al., 2019). Careful preparation based on solid research is necessary, as reviewing relevant studies can help identify challenges in creating effective online learning designs and offer alternative solutions, leading to improved quality. Lastly, geography teachers are not fully optimizing their ability to transfer knowledge when teaching lithosphere material online. Hansen (2008) emphasized that online learning promotes the application of theoretical knowledge in practical contexts. Thus, it is essential for teachers to receive ongoing training from the government to enhance their skills in transferring knowledge and values online. Zhao et al. (2014) highlight that transferring learning in an online environment is often more difficult than in traditional settings, providing further motivation for teachers to pursue training.

According to the index values, the factors demonstrating good quality include Learner Content, Learner Interaction, Instruction Interaction, Social Presence, and Course Design. However, other areas require improvement, such as Learner Satisfaction, Knowledge Acquisition, Learning Platform, Instruction, Learning Support, and Ability to Transfer. Since not all indices are fully optimized, enhancing online learning quality through training is essential. One effective option is the innovative Digital Education Shifting (DES) approach, which can make digital learning more engaging, effective, and a sustainable alternative that integrates well with traditional education over time (Aldhafeeri & Alotaibi, 2022). This will enable teachers to provide higher quality online learning, resulting in more effective material delivery to students.

CONCLUSION

Based on the results of the research and discussion that has been presented, in this section it can be concluded that the eleven factors in the online learning quality index based on teachers and learners' perceptions (OLQ-TLP) influence teacher perceptions. Geography teachers' perception of online learning is good. Meanwhile, by paying attention to the index value of each factor, an overview of the quality of online geography learning conducted by geography teachers in South Kalimantan can be obtained. Based on the index value, the factors with good quality are Learner content, Learner interaction, Instruction interaction, Social Presence, and Course design. Other factors still need to be improved, namely the factors of Learner satisfaction, Knowledge acquisition, Learning platform, Instruction, Learning support, and Ability of transfer.

DECLARATIONS

Conflict of Interest

We declare no conflict of interest, financial or otherwise.

Ethical Approval

The research has been approved by the Universitas Negeri Yogyakarta. All research was carried out in accordance with Universitas Negeri Yogyakarta research ethics guidelines applicable when human participants are involved.

Informed Consent

On behalf of all authors, the corresponding author states that all participants have been given informed consent and agreed to take part in this study.

DATA AVAILABILITY

Data used to support the findings of this study are available from the corresponding author upon request.

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