Systematics of Literature Reviews: Learning Model of Discovery Learning in Science Learning

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Abstract. The development of the 21st century has affected the world of education. Current education students must be led to learn more creatively and actively. This study aims Furthermore, a teacher is able to encourage learning motivation in learning science. Science learning is a compulsory subject in schools. In learning science, students must think more critically and scientifically. It aims to enable students to solve scientific problems. However, students are still less active in learning, student learning outcomes are low and student motivation in learning science is low. So, teachers are expected to be able to adopt a learning model that can make students more active and motivated in learning. The learning model of discovery learning is a learning model that supports the quality of student learning in science learning. This research is a type of systematic literature review research. The research data comes from analysis of national or international journals that have links with discovery learning models in science learning. Data collection was carried out by direct observation by observing related journals. Data search through the Google Scholar, ScienceDirect, Wiley, Eric and Springer databases. The keywords used in tracing data sources are discovery learning models, science learning and learning. The analysis technique is descriptive qualitative analysis with the PRISMA model. The results of the study concluded that the discovery learning learning model was able to improve learning outcomes and motivation in learning. Furthermore, the discovery learning learning model becomes a learning model that is able to support the quality of students in learning science. In addition, this learning model is able to make students more active in learning.

Keywords: Learning Model, Discovery Learning, Science.

Abstrak *: Penelitian ini mengkaji tentang Etika Komunikasi antara santri dengan dewan guru di Dayah Jamiah Al-Aziziyah Samalanga, di mana dalam penelitian ini akan membahas tentang bentuk dan etika komunikasi yang terjalin antara santri dengan dewan guru. Komunikasi antara santri dengan guru Dayah Jamiah Al-Aziziyah sudah pasti terjalin dalam berbagai kesempatan, sehingga tidak ada kegiatan apapun tanpa adanya komunikasi. Tetapi komunikasi yang terjalin masih dalam sebatas bentuk komunikasi saja belum mengarah kepada etika dalam berkomunikasi, padahal etika komunikasi merupakan sesuatu yang sangat penting dalam proses komunikasi. Maka fokus penelitian ini adalah tentang bagaimana etika komunikasi antara santri dengan dewan guru di Dayah Jamiah Al-Aziziyah Samalanga. Penelitian ini menggunakan penelitian kualitatif dengan jenis field research, yaitu kajian lapangan yang mengkaji persoalan etika komunikasi santri dengan dewan guru dalam pesrpektif komunikasi Islam. Adapun teknik pengumpulan data dilakukan dengan observasi, wawancara dan dokumentasi tentang etika komunikasi santri dengan dewan guru dalam berbagai apsek. Penelitian ini bertujuan untuk mengetahui etika komunikasi santri dengan dewan guru di Dayah Jamiah Al-Aziziyah Samalanga, di mana etika komunikasi yang dipakai sudah sangat baik dan sempurna. Dengan adanya etika komunikasi yang baik antara santri dengan dewan guru, maka semakin mudah terjalin komunikasi karena saling menjaga antara satu sama lain dalam berkomunikasi. Etika komunikasi merupakan salah satu aspek yang perlu diperhatikan dalam berkomunikasi dengan siapa saja, termasuk dalam komunikasi antara santri dengan dewan guru Dayah Jamiah Al-Aziziah.*

Kata kunci: *Etika, Komunikasi, Santri, Dewan Guru.*

BACKGROUND

The 21st century has brought very rapid progress to the life of the world community, especially in the field of education (Bayley, 2022; Peña-Ayala, 2021; Taar & Palojoki, 2022). The world of education today has implemented technology to assist student learning (Pellegrino, 2014). Not only that, the application of technology in the learning process makes it easier for teachers to convey information to students (Connor et al., 2022; Nogerbek et al., 2022; Glebov et al., 2021; Andersen et al., 2022). Furthermore, students must have competence in mastering technology as a learning tool (Wu et al., 2020; Suharyat et al., 2022). In learning students must achieve the learning objectives set by the teacher (Oktarina et al., 2021).

Teachers are education personnel who have the duty to train students to become individuals who are useful for the nation (Ichsan et al., 2022; Santosa & Yulianti, 2020). Professional teachers must be able to encourage students to be more active in learning (Bochkareva et al., 2020), thus helping students to be more motivated to get satisfactory learning outcomes (Zulkifli et al., 2022). Not only that, the teacher must master the class

so that the learning atmosphere is more active and interesting (Santosa et al., 2021). So, teacher professionalism is needed to create more effective student learning conditions, especially in science learning (Razak et al., 2021).

In science learning students must have the ability to think critically and scientifically (Oktarini et al., 2021). This thinking ability is necessary for students in solving phenomena in life (Khusniati, 2014). However, the quality of critical thinking of Indonesian students is still relatively low (Fradila et al., 2021; Suharyat et al., 2022). This can be seen from the quality level of students' science learning (Suhaimi et al., 2022). Based on research results from the Program for International Student Assessment (PISA), the quality of science learning for students is still low compared to other member countries (Jayani & Ruffaida, 2020). In the PISA study, Indonesia was ranked in the bottom 10 of 78 members (Pratiwi et al., 2019; Rahayu et al., 2012).
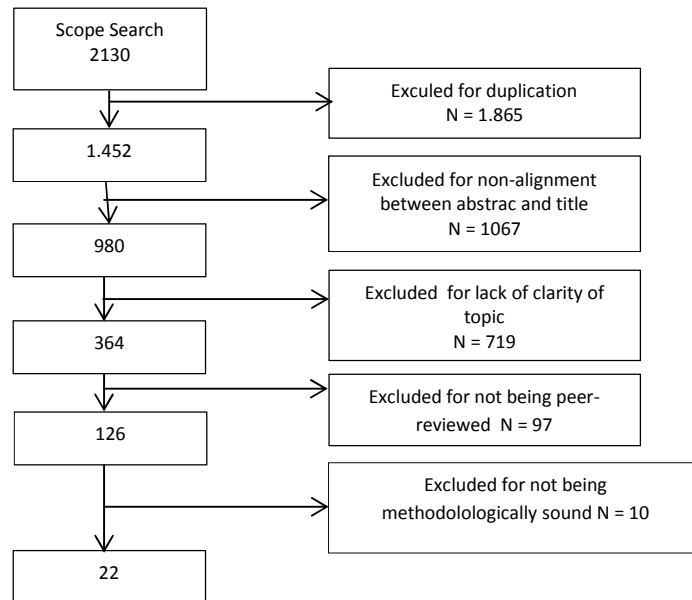
Furthermore, the quality of science has a relationship with the level of science education required by students in developing their potential with nature (Pratiwi et al., 2019; Ichsan et al., 2018). According to (Narut & Supradi, 2019) Understanding science helps students more easily solve problems in everyday life. So, the teacher must improve the learning model in learning science. Discovery learning model is a learning model that encourages students to make observations, experiments and scientific actions in learning (Sulfemi, 2019; Usman et al., 2022; Ristanto et al., 2022; Winarni et al., 2020). The discovery learning model is able to encourage students to be more active and motivated in learning (Kadri & Rahmawati, 2015). According to (Nurrohmi et al., 2017) states that the discovery learning model has a positive influence in training students' critical thinking skills in science learning. Research by (Putri et al., 2017). explained that the discovery learning model was able to encourage student learning outcomes in science material.

Further research results (Cintia et al., 2018) states that the application of the discovery learning model improves students' creative thinking abilities and learning outcomes in science learning. (Ilhan & Ekber Gülersoy, 2019) Stating the Discovery Learning model provides positive results in encouraging student motivation and learning outcomes in science learning. Research by (Dina et al., 2019) the discovery learning model is a learning model that is able to encourage students to be more active in learning. Based on these problems, this study aims to determine the application of discovery learning learning models in science learning.

Research Method

This research is a type of systematic literature review research. Systematic literature review research is a type of research that collects relevant literature which is then analyzed in depth. Sources of data in research come from analysis of national journals or international journals that have a relationship with research keywords. The keywords used to find data sources are discovery learning learning models, the influence of recovery learning models in science learning and science learning. Data search through 5 databases, namely Google Scholar, ScienceDirect, Wiley, Eric and Springer. Preliminary data was collected from 2,130 national and international journals with various research fields. The field of research consists of engineering, biology, physics, chemistry, mathematics and other social sciences. Furthermore, the source of this study reports the level of education starting from elementary education to tertiary education. Screening of data sources was carried out systematically by paying attention to exceptions, namely

duplication of titles, discrepancies in the content of abstracts and research results, discrepancies in research titles, research methods and results. Complete details of data sources can be seen in the figure. 1
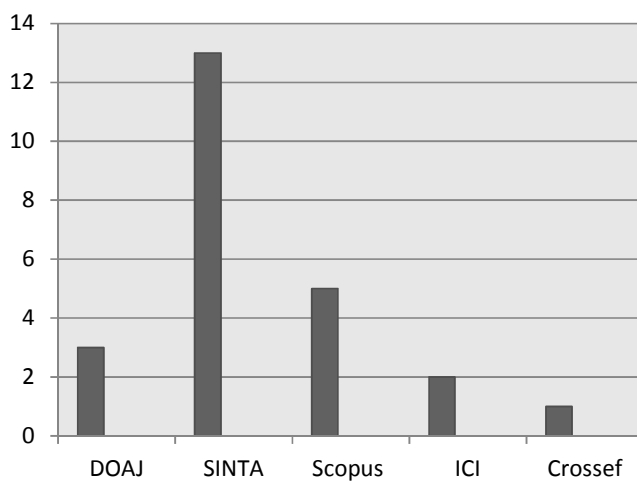

Hasil dan Pembahasan

From the results of reviews of 2,130 national and international journals, 25 articles were in accordance with the research. The articles come from various countries around the world. 11 journals are from Indonesia, 2 journals are from Turkey, 6 journals are from England USA and 3 journals are from India, Pakistan and Iran. In addition, the 25 journals published from 2015 to 2022 are indexed by Scopus, SINTA, DOAJ, ICI, and Crossef. Analysis of 24 articles about the application of the discovery learning model in science learning in full can be seen in table.1

Table. 1 Journal Profile

No	Author	Research Method	Result
1	(Sulfemi, 2019)	PTK	The Discovery Learning learning model provides positive results in encouraging learning outcomes, creative, critical and high-level thinking skills of students in science learning
2	(Putri et al., 2017)	Quasi Experiment	Discovery learning learning model is able to improve students' creative skills in learning
3	(Tumurun et al., 2016)	Experiment	The discovery model is able to encourage students' creative thinking skills in science learning

4	(Bahari et al., 2018)	Quasi Experiment	The discovery learning learning model is able to improve student learning outcomes in science learning
5	(Idrus & Irawati, 2019)	Meta-analysis	The discovery learning learning model is able to encourage student learning outcomes
6	(Ana, 2019)	Qualitative	Discovery learning is more effective in improving students' science learning outcomes than the conventional model
7	(Usman et al., 2022)	Experiment	The Discovery learning model can improve student learning activities and outcomes
8	(Sugiarti & Husain, 2021)	Experiment	Discovery learning encourages students' critical thinking skills in science material
9	(Ristanto et al., 2022)	Qualitative	The discovery learning model assists teachers in improving students' critical thinking skills
10	(Affandi et al., 2022)	Experiment	The discovery learning model improves student learning outcomes
11	(Pangesti & Radia, 2021)	Meta-analysis	The discovery learning learning model helps students improve results learn science students at school
12	(Puspitasari & Nurhayati, 2019)	Experiment	The discovery learning model is a more effective learning model in improving students' science learning outcomes
13	(Adnyani et al., 2020)	Quasi Experiment	The discovery learning model influences students' knowledge in learning science
14	(Faan et al., 2021)	Quasi Experiment	The discovery learning model is able to encourage student activity in learning science
15	(Volkamer et al., 2023)	Experiment	The discovery learning model is very effectively applied in science learning
16	(Shu & Ye, 2022)	Qualitative	The discovery learning model is effective in supporting

No	Author	Method	Findings
			students' scientific concepts for active learning
17	(Safitri & Setiawan, 2013)	Experiment	The discovery learning model becomes a learning model that trains students to think critically in learning science
18	(Rosdiana et al., 2017)	Experiment	The discovery learning model makes students more active and provides better learning outcomes in science material
19	(Siswanti, 2019)	Experiment	The application of the discovery learning model is able to encourage the quality of student learning outcomes
20	(Azura et al., 2019)	R & D	The development of discovery learning models improves students' biology learning outcomes.
21	(Hariawan et al., 2012)	Experiment	the discovery learning model is able to foster students' scientific attitudes in learning science
22	(Ulfa et al., 2017)	Experiment	the discovery learning model is able to foster scientific literacy in science learning
23	(Kasmini & Munthe, 2021)	Experiment	The discovery learning learning model helps students improve their science learning outcomes
24	(Setyawan & Kristanti, 2021)	Experiment	Students' critical thinking skills are effective with discovery learning models

Grafik.1 Indeksasi Jurnal Sumber Penelitian

The application of the discovery learning learning model is very effective in learning science (Pratiwi et al., 2019). The discovery learning learning model helps students and teachers achieve the stated lesson objectives. Graph.1 explains the analysis of indexing of articles consisting of 3 DOAJ indexed journals, 13 SINTA indexed journals, 5 Scopus indexed journals, 2 ICI indexed journals and 1 crossef indexed journal. These results indicate that the data source analyzed regarding the application of the discovery learning learning model is a reputable source. According to (Khofifah et al., 2021) the discovery learning model is able to help students solve problems in learning science.

Furthermore, the discovery learning model is a solution in improving student learning problems in science learning. Science learning is a learning that combines the disciplines of biology, physics and chemistry (Narut & Supradi, 2019; Masturah et al., 2018). Therefore, students in the science learning process must be led to be more active (Razak & Santosa, 2022). This serves to foster student learning motivation in learning science (Santosa & Sepriyani et al., 2021). High motivation will make it easier for students to understand the subject matter. According to (Permatasari et al., 2018) the discovery learning model is very effectively applied by teachers in fostering student learning motivation in learning science.

Science learning is a subject that must be mastered by students to foster a scientific attitude. (Winarni et al., 2020) science learning requires a high scientific attitude of students who aim to solve science problems (Suharyat et al., 2022). Students to be successful in learning science must improve the pattern of knowledge in learning (Rizaldi et al., 2020; Santosa al., 2021). Knowledge is all information that students get from reading activities (Ferry et al., 2020). In science learning knowledge is needed to help students more easily solve science problems (Suharyat et al., 2022). So, the discovery learning learning model is a model that helps teachers in training. The ability to think critically and creatively to foster a science attitude in students (Jamaludin et al., 2022; Lee, 2020). In addition, in the discovery learning learning model students are able to increase students' scientific literacy in learning science.

Scientific literacy in science learning is needed by students to train students' 21st century skills. Students' 21st century skills are required to think critically, creatively, collaboratively and communicatively (Abdullah et al., 2021; Karatas & Arpaci, 2021;Zorlu & Zorlu, 2021). So, with the discovery learning model, teachers can practice aba-21 skills in learning science. Furthermore, 21st century skills in science learning are needed by students to solve various kinds of scientific phenomena that occur in everyday life.

CONCLUSION

In this study it can be concluded that the discovery learning model is able to improve learning outcomes and motivation in learning. Furthermore, the discovery learning learning model becomes a learning model that is able to support the quality of students in learning science. In addition, this learning model is able to make students more active in learning. This model also assists students in improving the quality of their 21st century skills in science learning.

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