



Evaluation of Online Learning Implementation Program on Chemistry Lesson at Senior High School 1 Pekanbaru

Evaluasi Program Pelaksanaan Pembelajaran Daring Materi Kimia Pada Sekolah Menengah Atas Negeri 1 Pekanbaru

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Abstract: To find best online learning design for Senior High School in Pekanbaru, evaluation organised was needed. This research aimed was to determ the evaluation results of online learning implementation program on Chemistry lesson at State Senior High School 1 Pekanbaru by using CIPP (Context, Input, Process, Product). This researched conducted by Mixed Method with exploratory design in which the data collection in the early stage was carried out quantitatively and qualitatively. The research found that 1) Context stage at State Senior High School 1 Pekanbaru in the curriculum and objective aspects was categorized good; 2) Input stage in the learning media aspect was categorized high with percentage 68,2%, and the facilities and infrastructure aspect was categorized very high with percentage 97.1%; 3) Process stage in the learning model aspect was categorized high with percentage 71,4%; and 4) Product stage in the aspect of student learning achievement was categorized very good (score 86,6) and student's response to online learning was categorized high with total percentage 63.1%.

Keywords: CIPP Evaluation Model; Online Learning; Chemistry.

Abstrak: Untuk menemukan pembelajaran kimia secara daring yang baik, dibutuhkan evaluasi di salah satu sekolah favorit di Pekanbaru. Penelitian ini bertujuan untuk mengetahui hasil evaluasi program pelaksanaan pembelajaran daring pada materi kimia SMAN 1 Pekanbaru menggunakan tahapan model CIPP (Context, Input, Process, Product), menggunakan metode Mixed Method Research desain eksploratori (Explanatory Design) dimana pengumpulan data pada tahap awal dilakukan secara kuantitatif kemudian dilanjutkan dengan pengumpulan data kualitatif. Hasil penelitian menunjukkan bahwa 1) Tahap context SMAN 1 Pekanbaru pada aspek kurikulum dan aspek tujuan dikategorikan baik; 2) Tahap input SMAN 1 Pekanbaru pada aspek media pembelajaran dikategorikan tinggi dengan persentase 68,2% dan aspek sarana prasarana dikategorikan sangat tinggi persentase 97,1%; 3) Tahap process SMAN 1 Pekanbaru pada aspek model pembelajaran dikategorikan tinggi dengan persentase 71,4%; 4) Tahap product SMAN 1 Pekanbaru pada aspek hasil belajar siswa dikategorikan sangat baik dengan ketercapaian 86,6 dan aspek respon siswa terhadap pembelajaran daring dikategorikan tinggi dengan persentase 63,1%.

Kata Kunci: Model Evaluasi CIPP, Pembelajaran Daring, Kimia.



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A. Introduction

Education is the learning of knowledge, the basis of which is seen as a process (Fitriana et al., 2019). Learning is sought to continue to produce human resources who have skilled knowledge, skills and attitudes (Mulyanti et al., 2020). The material provided in learning, including one of them, is chemistry. Chemistry is a subject that requires students to be able to understand abstract and microscopic concepts, but often students find it difficult to learn chemistry material so that their enthusiasm for learning decreases. In addition, students experience problems from the way of learning, namely only memorizing concepts without really learning (Ihsan, 2020). The chemistry subject is also carried out *online* (online = in the network) which can be accessed via the internet for those who need it and as a form of educational service (O. I. H. dan S. S. Wulandari, 2020). Internet usage in Indonesia has increased, which is influenced by the development of information and communication technology. This is evidenced by data in 2018 which states that the Indonesian population who owns a cell phone is around 62.41% and those who own a computer are around 20.05%. The data is relevant to the results of previous research which states that although students do not yet have laptops, almost all students have smartphones (T. Wulandari et al., 2020). The use of ICT (Information and Communications Technology) such as the internet, smartphones and laptops can help students during online learning (Asmuni, 2020; Kurniawati et al., 2021).

Online learning is learning that is not done face-to-face, but online learning that uses the internet network and is carried out by teachers and students. This form of online learning is carried out remotely by utilizing telecommunications technology, information and as a form of adjustment to current conditions to adapt and innovate the learning process (Hamidah, 2020; Herliandry et al., 2020).

In some conditions, distance or online learning is a solution to continue implementing learning, namely 1) the existence of natural disasters such as floods where the condition of the classrooms of 29 SMA / SMK schools in the area has been flooded and the access road to the school cannot be passed, besides that natural disasters such as smog that often hit several regions in Indonesia resulted in the need for online learning in schools, and natural disasters such as earthquakes that have damaged school buildings so that the learning space is considered unfit or inappropriate for the teaching and learning process to take place raises an appeal for the need to implement online learning, 2) the existence of non-natural disasters such as Covid 19 and fires that have occurred in schools in Indonesia, online learning as a solution to continue the teaching and learning process, 3) other urgent matters such as during election calculations at 4 high school level schools in an area implementing online learning for 2 days to facilitate the implementation of elections.

In addition, it can be seen that online learning has advantages in its

implementation such as being accessible from various times and places by students and teachers, as well as getting wider information through the internet network. Utilizing technology is considered a very helpful solution in the implementation of learning during social restrictions in the midst of natural disasters, emergency conditions, such as the Covid 19 pandemic (Oktawirawan, 2020) and others. Dabbagh and Ritland mentioned that online learning has several aspects, including: (a) learning model, (b) online learning media. These two aspects can facilitate students in carrying out the teaching and learning process by utilizing the use of learning technology (Atsani, 2020).

The first aspect is the learning model used by the school. One of the online learning models is blended learning. Blended Learning is a learning model that combines the approaches of behaviorism, constructivism, and cognitivism so as to obtain good learning achievements with or without the use of learning technology (Sari, 2019) and there are various other learning models.

The second aspect is learning media. Media is something that can be used as a channel for messages by teachers to students, able to stimulate thoughts, feelings, attention and interests of students so that the learning process occurs. It can be concluded that the media is a tool or supporting material for the learning process. Whether the learning process is successful or not can be determined by the media that will be used.(Atsani, 2020). One of the online learning media used by teachers includes Edmodo, Schoology, Google Classroom, and Whatsapp. Social media such as Instagram and Facebook can also be utilized for online learning media (Hartono, 2020).

Both aspects above require examples of learning implementation whose value is determined by student response. However, inreality, the use of online learning is not yet technically and systematically ready, as it is only implemented as a concept and technicaltool, not yet as a way of thinking of learning paradigm. In fact, online learning is not a method to change face-to-face learning with online applications, nor does it burden students with tasks that are piled up every day, but rather encourages students to be creative in accessing as many sources of knowledge as possible, producing work, honing insights and ultimately making students as human beings, having the ability to think patterns and life skills (Mastur et al., 2002). In addition, online learning is carried out by adjusting the capabilities of each school (Maskar et al., 2020). Therefore, each school in terms of learning media, learning models and student responses are not necessarily the same, depending on the capabilities of each school. These three aspects require evaluation of the learning program.

The learning program evaluation model used in this study is the CIPP (Context Input Process Product) model. The CIPP model was developed by Daniel Stufflebeam and Shinkfield (1985) with 4 stages, namely context, input, process, and product. (Kurniawati et al., 2021). The CIPP evaluation model has advantages over other program evaluation models, namely that it is more comprehensive and detailed, because the object of evaluation is not only the results but includes the context or background (context), input (input), process (process), to the results (product) (Sugandini et al., 2018).

Based on the explanation of the evaluation model above, it is then supported by previous research conducted by Bhakti (Bhakti, 2017)) it is known that the results of the evaluation of offline science learning using the CIPP evaluation model are considered quite effective at SMP IT Raudlatul Jannah. Therefore, to find a good form of online chemistry learning, evaluation is needed in favorite schools, especially those in Pekanbaru and surrounding areas, as part of the evaluation of the learning process using the CIPP evaluation model. This research was conducted on students of class XI MIPA at SMAN 1 Pekanbaru.

B. Research Methods

This research was conducted at SMAN 1 Pekanbaru and was conducted in June 2021. The population in this study were students in class XI MIPA SMAN 1 Pekanbaru in the 2020/2021 academic year, while the samples were class XI MIPA 2, XI MIPA 3 and XI MIPA 4, namely 108 students. The sampling technique in this study was simple random sampling technique. This study uses a mixed method approach, with an exploratory design, where the exploratory design is a design in which the initial stage of data collection is carried out on quantitative type data, then continued with qualitative type data collection (Kurniawati, 2020).

The instruments used are questionnaires (using google form), document analysis (lesson plans and student chemistry scores, and documentation checklists. Data analysis techniques used using descriptive techniques (Baroroh, 2008) assisted by interviews and documentation analysis (Sugiyono, 2013). Score range in quantitative data analysis (Riduwan, 2011):

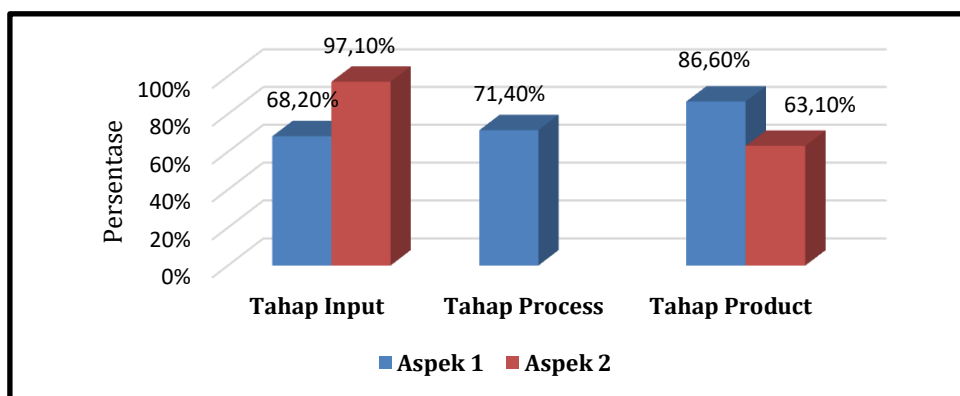
Table 1. Descriptive Quantitative Data Analysis Categorization Guidelines

No.	Percent Score Range	Category
1.	0% – 20%	Very Low
2.	21% – 40%	Low
3.	41% – 60%	Medium
4.	61% – 80%	High
5.	81% – 100%	Very High

The questionnaire distributed has 50 statements which have previously been validated by expert validators and then tested in non-sample classes to test empirical validity. Then it is analyzed to see the valid items so that they can be used for research instruments. After a series of analysis, 46 valid and reliable statements were obtained, which means that they are feasible and consistent to use for research. This evaluation research uses the CIPP evaluation model. Related to the CIPP evaluation model, the explanation of this research includes the CIPP stages and the aspects measured. The CIPP stages and aspects measured in this study are 1) context stage with aspects of curriculum and objectives, 2) input stage with aspects of infrastructure and learning media, 3) process stage with aspects of learning

strategies or models, and 4) product stage with aspects of learning outcomes and student responses.

C. Results and Discussion



Picture 1. Input, Process and Product stages

Based on **Picture 1**, it can be seen that from the input stage, the results of online learning implementation in terms of aspect 1 (learning media of SMAN 1 Pekanbaru) are categorized as high with a percentage of 68.2% and aspect 2 (infrastructure of SMAN 1 Pekanbaru) is categorized as very high with a percentage of 97.1%. The process stage is the result of the implementation of online chemistry learning in terms of aspect 1 (learning model of SMAN 1 Pekanbaru) which is applied in a high category with a percentage of 71.4%. And the product stage in aspect 1 (the results of the achievement or chemistry scores of SMAN 1 Pekanbaru students) is categorized as high, namely with an average of 86.6 and for aspect 2 (student response to online learning applied at SMAN 1 Pekanbaru) is categorized as high, namely 63.1%.

The evaluation results for each aspect can be explained as follows:

1. Context

The context stage consists of aspects of the curriculum and aspects of the objectives measured by the researcher. The indicators at the context stage from the curriculum aspect that have been formulated by researchers are that the curriculum is in accordance with the needs of students and the field. This indicator consists of 2 sub-indicators, 1) the curriculum is in accordance with the needs of students and the field, 2) program implementation is adjusted to the curriculum. This indicator is seen from the analysis of lesson plan documents, which shows that SMAN 1 Pekanbaru applies the 2013 Curriculum with adjustments to PJJ (Distance Learning). Based on circular letter number 14 of 2019 issued by the Indonesian Minister of Education and Culture, a simplification of the Learning Implementation Plan (RPP) was made by only containing 3 core components, namely a) learning objectives, b) learning steps, and c) learning assessment, while other components are only complementary. This aims to make it easier for teachers to make lesson plans.

Chemistry teacher of SMAN 1 Pekanbaru applies what has been recommended

by the Ministry of Education and Culture by making PJJ lesson plans in Chemistry subjects and has adjusted the formulation of core components to the needs of students in the field (home). This is evidenced by formulating learning objectives and learning steps that are clear, good, and structured. In addition, student assessment techniques are also in accordance with the 2013 Curriculum, which consists of attitude, skills and knowledge competencies. Assessment is seen from the process to the results obtained.

Furthermore, the objective aspect of the context stage has 2 indicators and several sub-indicators that are seen, namely 1) the program objectives are in accordance with the curriculum, with 2 sub-indicators a) program implementation is always based on program objectives, b) program implementation is based on student needs. Indicator 2) Program objectives are in accordance with the needs and implementation, with 2 sub-indicators a) program objectives are adjusted to the needs, b) program objectives are clearly formulated because they are related to the results achieved.

Learning objectives are in accordance with the 2013 Curriculum where students must be active, and able to explore information from various sources. In contrast to the attached lesson plan, in reality, during the implementation of Chemistry learning obtained from the results of teacher interviews related to learning strategies or models, the teacher answered that he did not apply a particular learning model, but learned with the lecture and discussion method.

The learning objectives in the lesson plan are expected that students can be active, responsible, can develop the character values of critical thinking, creativity, cooperation and honesty. This shows that the learning objectives are clearly formulated because they are related to the results achieved and in accordance with the needs of students who must remain active even though learning online.

This is in line with previous research (Sumardi, 2014) who said that learning will be effective if it is prepared carefully and well, by determining specific and clear objectives, appropriate and organized materials or materials, appropriate methods, and organizing the learning process systematically. All of these preparations are contained in the learning program plan formulated by the teacher. Therefore, to create effective and efficient learning, teachers must first be able to formulate lesson plans properly.

So the context stage seen from the aspect of curriculum and objectives that SMAN 1 Pekanbaru can be said to be good. When formulating the planning SMAN 1 Pekanbaru is very good, seen from the lesson plans that have been in accordance with the curriculum 2013 PJJ and learning objectives formulated have been made clearly. However, during implementation there is a slight difference from the planning that has been made, because it must adjust to the ability or needs of teachers and students during the learning process.

2. Input

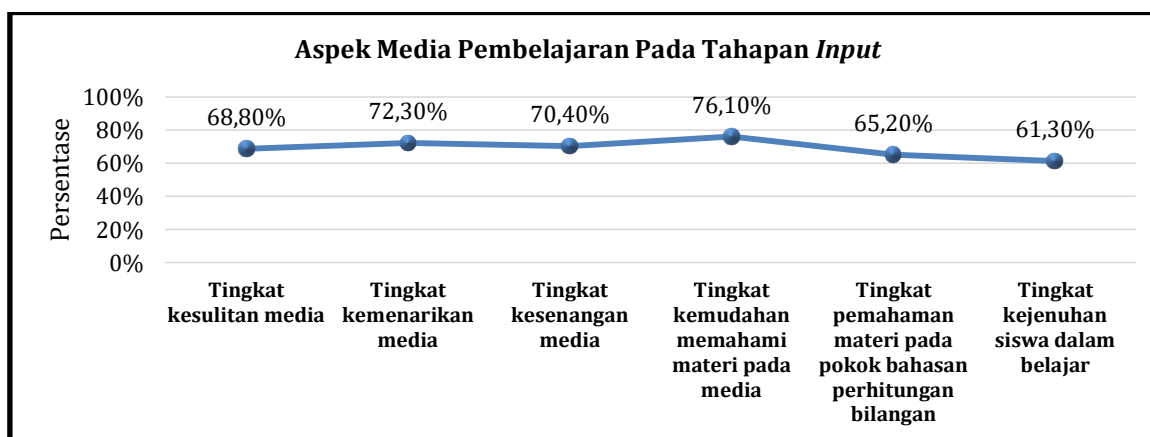
The input stage consists of aspects of infrastructure and learning media aspects

measured by researchers. The indicators of infrastructure aspects measured by researchers are adequate facilities to support the achievement of goals, with 2 sub-indicators a) complete facilities to achieve learning goals, b) the facilities used are suitable for use.

Based on the sub-indicator of complete facilities to achieve learning objectives, of the 35 infrastructure facilities, not all of them can be used to achieve online learning objectives, including the science laborator room, BP / BK room, UKS room, art tool room, cooperative room, student council room, canteen, hall, basketball court, volleyball court.

As for the sub-indicator of the feasibility of infrastructure facilities, there are 34 infrastructure facilities that are suitable for use and only 1 infrastructure facility that is not suitable for use, namely the science laboratories, which consist of 3 classrooms, namely Chemistry laboratories, Physics laboratories and Biology laboratories. The Physics and Chemistry laboratories are currently being dismantled and the Biology laboratories are being used as emergency laboratories (putting all the science practicum tools and materials), because SMAN 1 Pekanbaru is making improvements while online learning is in effect. When online SMAN 1 Pekanbaru does not implement practicum learning so there is no use of science labor facilities as a teaching and learning process.

The learning media aspect is seen from the results of student questionnaires, teacher questionnaire results, student interview results, and teacher interview results. The percentage of each indicator on the aspect of learning media can be seen as follows.



Picture 2. Percentage of Learning Media Aspect Indicators at the Input Stage

Based on **Picture 2**, it can be seen that all percentages on the learning media aspect indicators are categorized as high, which is in the range of 61% - 80%. In the indicator of the level of ease of understanding the material on the media has the highest percentage of 76.1%. While the indicator with the lowest percentage is the indicator of the level of student boredom in learning at 61.3%. The conclusion of student interviews from question number 6 can strengthen that the use of learning media applied by SMAN 1 Pekanbaru is quite helpful for students in understanding,

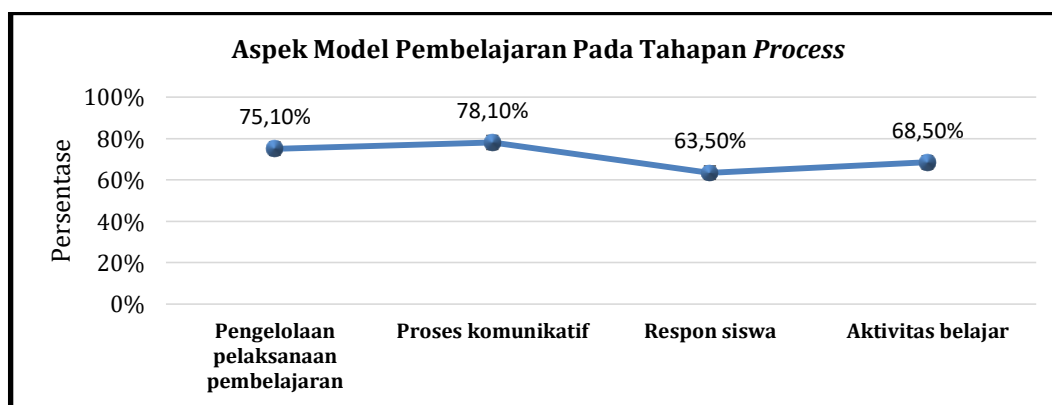
with the question "What learning media is easier to understand chemistry learning?", and students answered as follows.

"It is easier to understand using Google Classroom because the teacher explains the learning through the media. Power Point as additional teaching material in addition to textbooks, and Whatsapp as a means of communication if teachers and students are unable to attend or provide other information.", then supported by the results of the teacher questionnaire and the results of teacher interviews, some teachers answered that the learning media was effectively used in the long term and some answered that it was normal, because the learning media inevitably had to be used because of demands or requests from the school, besides that in terms of online learning media (GC, PPT, WA) it was a good solution.

This is also reinforced by the results of previous research related to GC (El Fauziah et al., 2019) that teachers are enthusiastic and interested in the use of GC, teachers know the applications they can use in learning, teachers can more easily manage the class, save time, and provide examples to students to protect the environment by reducing the use of paper.

3. *Process*

The process stages of the strategy or learning model aspect can be seen from the results of student questionnaires, teacher questionnaire results, student interview results, and teacher interview results. The percentage of each indicator on the aspect of the learning model can be seen as follows.



Picture 3. Percentage of Learning Model Aspect Indicators at the Process Stage

Based on **Picture 3** above, it can be seen that all indicators of the learning model aspects at the process stage are categorized as high, which is in the range of 61% - 80%. The communicative process indicator has the highest percentage of 78.1%. While the indicator with the lowest percentage is the indicator of the level of student response of 63.5%.

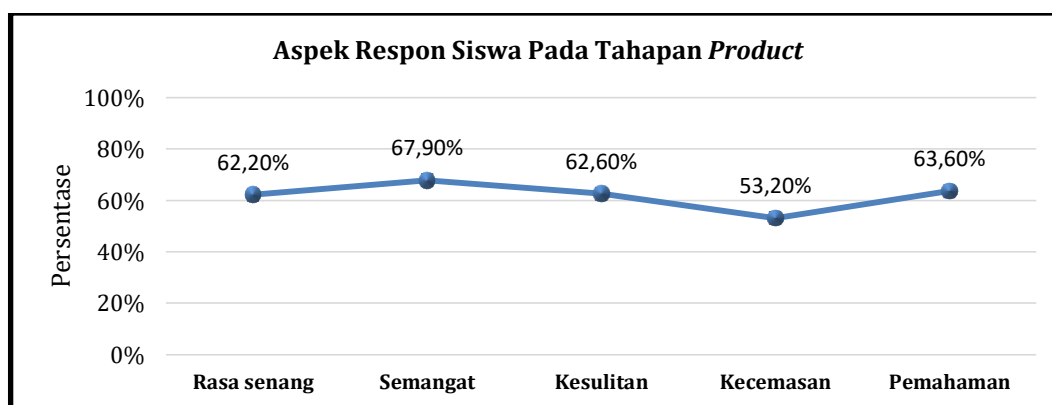
The results of student interviews obtained can strengthen how the process of implementing online chemistry learning obtained during data collection at SMAN 1 Pekanbaru, namely during implementation the teacher will discipline students by

asking students to turn off the camera and audio when explaining the material via Meet, but there are times when the teacher will call the student's name randomly to find out whether the student is listening to the teacher's explanation or not. The way the teacher disciplines when submitting assignments is by using a deadline via Google Classroom, if the student is late submitting the assignment then the student will be deducted points. Of the 10 students interviewed, on average students prefer to ask friends rather than teachers, because with friends it is easier to discuss and ask questions via Whatsapp. A small number prefer to ask the teacher because the teacher will serve if students ask questions and the answers are more reliable. There are also students who look for explanations via the internet on Google or learn through learning videos on Youtube.

It is inversely proportional to the results of the student questionnaire percentage, that according to the teacher based on the results of the teacher questionnaire and the results of the teacher interview in the use of online learning models (lectures and discussions) by SMAN 1 Pekanbaru is considered not good in managing learning, because it is difficult to monitor students who turn off the camera and audio. In responding to learning when there is a question and answer and the student's score depends on the student, if the student is a diligent type then the response is fast and the student's score when learning online increases. Conversely, if the student is the type who is not diligent, then it will be mediocre in responding.

4. **Product**

The product stage consists of aspects of learning outcomes and aspects of student responses measured by researchers. The indicators at the product stage from the aspect of learning outcomes that have been formulated by researchers are student chemistry scores, with sub-indicators of good student learning outcomes.



Picture 4. Percentage of Indicators of Student Response Aspects at the Product Stage

Based on **Picture 4** above, it can be seen that all indicators of student response aspects at the product stage are categorized as high, which is in the range of 61% - 80%. The enthusiasm indicator has the highest percentage, which is 67.9%. While the indicator with the lowest percentage is the anxiety indicator of 53.2%.

The results of student interviews, the results of teacher questionnaires, and the

results of teacher interviews show that most students prefer to study offline compared to online. The reason students prefer to study offline is because online learning is constrained by networks, data packages, difficulty communicating and interacting with friends. The reason students who answered that they preferred online said that they understood the learning explained online by the teacher because they had studied at the tutoring center, besides that the place and time of learning was more flexible. The obstacles that students often experience when learning online are greater laziness, often constrained by the network and more difficult to capture material explanations than offline.

The results of interviews with 10 students showed that students also claimed to be anxious if they could not understand or had misconceptions about the material, anxious about being late in submitting assignments because there were several assignments with short deadlines, and while studying anxious if the teacher suddenly asked a question but the teacher's previous explanation was not heard by the student, and anxious if the teacher did not accept the student's excuse if he suddenly left the Meet, and so on. In addition, the fact that 8 out of 10 students interviewed felt that they did not understand, so they had to repeat learning the material so that they understood better, while the other 2 students claimed to have understood because they had studied at the tutoring center.

The overall results of the study showed positive results, namely the results of the context stage showed that in the curriculum aspect and the objective aspect, it could be said that SMA Negeri 1 Pekanbaru was in the good category. The formulation of planning of SMAN 1 Pekanbaru is done very well, but during implementation there is a slight difference from the planning that has been made, because it must adjust to the ability or needs of teachers and students during the learning process. The results of the input stage evaluation for online learning implementation indicators seen from the aspect of learning media are categorized as high with a percentage of 68.2% and the aspect of supporting infrastructure of SMAN 1 Pekanbaru is categorized as high with a percentage of 97.1%. The results of the process stage evaluation on the aspect of the learning model applied by SMAN 1 Pekanbaru are categorized as high, this is obtained based on a percentage of 71.4%, which applies the lecture and discussion learning model. The results of the product stage evaluation show that in the aspect of learning outcomes and aspects of student response at SMAN 1 Pekanbaru can be categorized as very good with the results of student achievement 86.6 and the percentage of student response results 63.1%.

D. Conclusion

Based on the research results in evaluating online learning in chemistry material, the conclusion is that the overall evaluation results based on all stages of CIPP at SMAN 1 Pekanbaru are rated good or high category. This shows that the online learning system or program of SMAN 1 Pekanbaru can be an example of good practice in the implementation of learning in Pekanbaru.

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