JoSSEd
Journal of Science and Science Education
ISSN: 2774-1869 eISSN: 2774-2105

# Analysis of Student Satisfaction with The Quality of Services in Physics Learning in The Implementation of The Independent Curriculum

Fahmi Hasbullah [1*], Kaharuddin Arafah[1], Mansyur[1]

[1] Program Studi Penelitian dan Evaluasi Pendidikan, Program Pascasarjana, Universitas Negeri Makassar, Makassar, Indonesia

Received: February 15, 2025
Revised: March 30, 2025
Accepted: April 27, 2025
Published: April 30, 2025

Corresponding Author:
Fahmi Hasbullah
fahmi.hasbullah19@gmail.com

DOI: 10.29303/jossed.v6i1.9768



Phone*: +6282399542397

**Abstract:** This study is a quantitative descriptive study that aims to examine the level of students' satisfaction on the quality of Physics learning services in the implementation of Merdeka (independent) curriculum at UPT SMAN 2 Makassar. The research population was 360 grade X students. The sampling used in the study was the proportional cluster random sampling technique and obtained a sample of 300 students. Data collection used a questionnaire with a Likert scale model. The data analysis used was Importance Performance Analysis (IPA) and Customer Satisfaction Index (CSI). The results of the IPA analysis reveal that the quality of educational services in the tangible (physical evidence) and reliability dimensions at UPT SMAN 2 Makassar, the service quality is so-so and considered less important by students, so the handling is in low priority. In the dimensions of assurance, empathy, and responsiveness, the service quality needs to be maintained because the reality discovered is in accordance with the students' expectations. The results of the CSI analysis obtained a value of 75.57%, indicating that the students' satisfaction on the quality of Physics learning services in the implementation of Merdeka curriculum at UPT SMAN 2 Makassar is in "satisfied" category.

**Keywords:** Customer Satisfaction Index; Importance performance analysis; Service quality.

## Introduction

The independent curriculum has the principle that all learning activities are student-centered by giving the term Independent Learning which allows students to choose lessons that they consider important and relevant for their future. The independent curriculum provides opportunities for educators to create quality learning, in accordance with the needs and learning environment of students (Baro'ah et al., 2023). The characteristics of this curriculum include: soft skills and character development through the Pancasila Student Profile Strengthening Project (P5); focus on essential, relevant and in-depth material. This can provide enough time to build students' creativity and innovation in achieving basic competencies such as literacy and numeracy; and flexible learning.

The government provides opportunities for every educational institution to enforce this curriculum in accordance with the ability and readiness of school teachers. The implementation of the independent curriculum in Makassar was initially only carried out by SMAN 2 Makassar, SMAN 4 Makassar, SMAN 9 Makassar and SMAN 21 Makassar (Apriani et al., 2024).

The realization of the Independent Curriculum that is currently implemented is expected to improve the management and improvement of the quality of services in schools. With good management accompanied by improving the quality of services provided to students, it will be able to shape students into quality individuals. Therefore, in implementing this Independent Curriculum, all components of subject teachers in schools are certainly required to be able to provide quality educational services to students, including physics learning.

Physics is a branch of science that studies natural phenomena including matter and energy and the interactions that occur between them. According to Druxes (1986) physics describes and analyzes structures and events in nature, engineering, and the world around us. The essence of physics according to Murdani (2020) is as a product and also as a process. Physics as a product means that physical knowledge obtained from scientific observations systematically based on human needs is

**How to Cite:**
Hasbullah, F., Arafah, K., & Mansyur. (2025). Analysis of Student Satisfaction with The Quality of Services in Physics Learning in The Implementation of The Independent Curriculum. *Journal of Science and Science Education, 6*(1), 70–79. https://doi.org/10.29303/jossed.v6i1.9768

able to produce a set of knowledge that is then called a product or "body of knowledge". While physics as a process means that physics is related to investigation and publication. From this, it can be seen that physics is a branch of science that involves scientific processes and activities.

Quality can be defined as the sum of the characteristics of products and services resulting from marketing, engineering, production and maintenance that make the service or product can be used to meet customer expectations (Wijaya, 2018). Furthermore, Moenir (2008) explained that service is the process of fulfilling needs through the activities of others directly. Grönroos (2007) also emphasized that the word "service" does have many meanings and scopes, ranging from the simplest sense, to the most complex. Furthermore, Grönroos (2007) defines service in a broader perspective as services provided by humans, both those that can be seen directly (explicit service) and those that cannot be seen directly or can only be felt (implicit service) to supporting facilities that must be available in the sale of services and other objects. Service quality is a form of state or assessment felt by students, on the level of service received (perceived service) with the level of expected service (expected service) by students. So, basically the essence of education services is the provision of quality services. Because the success of education services is determined by the provision of quality services to education service users, namely students (Pontjorini et al., 2005).

In an empirical study conducted by Parasuraman et al. (2002) in the United States, it is known that there are five dominant or determinant factors of service quality, namely: "tangibles, reliability, responsiveness, assurance, and empathy. These five dimensions of service quality can also affect students' behavior or satisfaction as users of educational services. Therefore, schools are required to always strive to improve the quality of educational services provided to students. The better the quality of service provided by the school, the more it will have an impact on the level of satisfaction of students who receive the service.

Basically, the quality or quality of educational services is closely related to student satisfaction. This is as expressed by Ishikawa who states that quality is satisfaction (Triatna & Komariah, 2005). This means that a school is said to be of high quality, if the school can meet the needs of students. When the expected needs of students are met, then students will feel satisfied. In addition, Smith & Ennew (2001), has researched about word of mouth in consumers of educational institutions. The result is that consumers who are satisfied with the quality of the institution's services will inform others (Nugroho, 2015).

From the explanation above, we can know that as one of the driving schools, UPT SMA Negeri 2 Makassar has certainly tried to provide maximum educational services to students. However, based on initial observations and interviews conducted by researchers to several students at UPT SMA Negeri 2 Makassar, it was found that during the implementation of the independent curriculum at UPT SMAN 2 Makassar, students who chose physics as an elective subject in grades XI and XII tended to be fewer compared to other science subjects such as biology and chemistry. This shows that there are indications of students' dissatisfaction with the physics learning they received when they were in class X.

## Method

This type of research is a survey that aims to analyze the quality of services in physics learning in the implementation of the independent curriculum at UPT SMAN 2 Makassar, through the dimensions of tangibles, reliability, responsiveness, assurance, and empathy. The sampling technique in this study was carried out using the proportional cluster random sampling technique. The determination of the minimum sample size is determined using the Slovin Formula 1 (Arikunto, 2013).

$$n = \frac{N}{(1+Ne^2)} \quad (1)$$

Information:
n = Minimum Sample Size
N = Number of Population
e = tolerable % with the uncertainty of using samples as a substitute for population.

**Table 1.** Table of minimum sample sizes for each population group

| Group | Population | Minimum Sample Size | Sample size used |
|---|---|---|---|
| A | 72 | 62 | 64 |
| B | 72 | 62 | 63 |
| C | 72 | 62 | 67 |
| D | 144 | 106 | 106 |
| Total | | | 300 |

The data collection technique used in this study is by using a non-test instrument in the form of a questionnaire about the quality of physics learning services that have been tested for validity by experts and have been empirically tested. This questionnaire was distributed to research samples to obtain research data. Furthermore, the research data was analyzed quantitatively using Importance Performance Analysis (IPA) and Customer Satisfaction Index (CSI). However, before being analyzed using the two analyses, a

homogeneity test is first carried out to find out whether the research data is homogeneous or not.

*Homogeneity Test*

The Barlet Test is one of the homogeneity tests that can be used to test the homogeneity of more than three data groups. Because in this study there are four sub-populations of data, the four data groups are tested for homogeneity using the Bartlett test.

**Table 2**. Barlett Homogeneity Test

| Group | Db | Varians | log varians | db.logvarians | db.varians |
|---|---|---|---|---|---|
| A | 63 | 389.4427 | 2.590444 | 163.1979 | 24534.89 |
| B | 62 | 349.6306 | 2.543609 | 157.7038 | 21677.10 |
| C | 105 | 346.9948 | 2.540323 | 266.7339 | 36434.46 |
| D | 66 | 323.6637 | 2.510094 | 165.6662 | 21361.80 |
| Total | 296 | | | 753.3018 | 104008.20 |

**Table 3.** Comparison of chi-squared values of calculation and chi-squared table

| Combined variance | 351.3792 |
|---|---|
| B | 753.5497 |
| Chi-kuadrat | 0.57074 |
| Chi-tabel | 7.814728 |

Based on the results of the data homogeneity test using the Barlett test in Microsoft Excel, it was obtained that the data was homogeneous with a calculated square chi of 0.57074 while the square chi of the table was 7.814728. Since the quadratic chi calculates < from the quadratic chi of the table, it can be concluded that the four data groups are homogeneous.

*Importance Performance Analysis (IPA)*

Importance Performance Analysis (IPA) was first proposed by Martilla & James (1977), in their article published in the Journal of Marketing. In the science technique, respondents were asked to assess the importance level of various relevant attributes and perceived performance in each attribute. Then the average value of the level of importance of attributes and company performance, is analyzed through the importance performance matrix (Tjiptono & Chandra, 2016).

Importance Performance Analysis (IPA) aims to find out the dimensions that must be prioritized in improving the quality of educational services in physics learning at SMAN 2 Makassar. Each dimension of the research, both the average score of the assessment of the quality of educational services at the reality level (X) and the average score of the assessment of the quality of educational services at the expected level (Y) are described into four parts of the science cartesian diagram as follows:

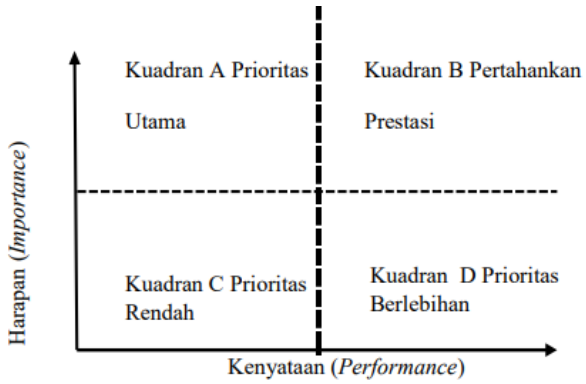


**Figure 1.** IPA Diagram

The criteria for drawing conclusions using a IPA cartesian diagram according to Retnowati et al. (2017) are as follows: Quadrant A means that the items that need to be handled need to be prioritized, because their existence is highly expected but in reality is not yet appropriate; Quadrant B means that the items that need to be maintained, because the reality obtained is in accordance with expectations; Quadrant C means that the items are considered less important, while the quality of the implications is ordinary or sufficient; and Quadrant D means that the items that are judged are exaggerated in their implications. Where the implementation is very good, but this item is not very important.

*Customer Satisfaction Index (CSI)*

The Customer Satisfaction Index (CSI) is a quantitative analysis in the form of a percentage of satisfied customers in a customer satisfaction survey. CSI is used to determine the overall level of consumer satisfaction, taking into account the level of expectations and reality of the service quality attributes measured. The value of the CSI is directly proportional to the magnitude of the average score of expectations and reality. So if the average score is increased, it will affect the increase in CSI scores (Aritonang, 2005).

The Customer Satisfaction Index (CSI) is used to determine the level of student satisfaction with the quality of physics learning services at UPT SMAN 2 Makassar as a whole, taking into account the level of expectations and reality of the service quality attributes measured. Once the CSI value is obtained, the next step is to determine the category of the CSI value. According to Ihsani (2005), the overall level of consumer satisfaction is divided into five satisfaction criteria, as shown in the Table 4.

**Table 4.** CSI Criteria

| CSI Value | CSI Criteria |
|---|---|
| 0.81 – 1.00 | Highly satisfied |
| 0.66 – 0.80 | Satisfied |
| 0.51 – 0.65 | Quite satisfied |
| 0.35 – 0.50 | Less satisfied |
| 000 – 0.34 | Dissatisfied |

## Result and Discussion

The data processing in this study was carried out with the help of Microsoft Excel 2010 and SPSS version 22, which aimed to process data and obtain results from the service dimension in the physics learning studied. In this study, the quality of service in physics learning in the implementation of the independent curriculum provided by UPT SMAN 2 Makassar, is grouped based on five dimensions of service, namely tangibles (physical evidence), empathy, reliability (reliability), responsiveness, and assurance (guarantee).

The measurement results were obtained from the calculation of the average level of interest (expectation) and satisfaction level (reality) of students through the distribution of questionnaires. The results obtained are then plotted into a cartesian diagram. After being mapped, it will be seen how the quality of physics learning services at UPT SMAN 2 Makassar is against its service attributes, as well as providing information, whether it is necessary to make improvements or maintain its performance. In detail, there are two stages of processing used in Importance Performance Analysis (IPA), namely:

*Conformance Analysis*

The measurement of the level of conformity is carried out to find out how satisfied the customer/consumer is with the company's performance, and how well the service provider understands what the customer wants for the services they provide. Supranto (2018) explained the criteria for customer suitability as follows: A customer suitability level of > 100% means that the quality of the service provided has exceeded what the customer considers important or the service is very satisfactory; Customer suitability rate = 100% means that the quality of service provided meets what is considered important by the customer or the service has been satisfactory.

The customer suitability level < 100% means that the quality of service provided is lacking/not meeting what is considered important by the customer or the service is not satisfactory.

**Table 5.** Service Conformance Level Category (Supranto, 2018)

| Category | Conformity Level % |
|---|---|
| Very Dissatisfied | 0– 32 |
| Dissatisfied | 33 - 65 |
| Less Dissatisfied | 66 - 99 |
| Satisfied | =100 |
| Very Satisfied | >100 |

The formula used to assess the level of conformity between the services experienced and expected according to (Martilla & James, 1977) as represented bi Formula 2 (Lupiyoadi & Hamdani, 2006).

$$TK_1 = \frac{X_i}{Y_i} \times 100\% \quad (2)$$

Note :

TK1 = Degree of conformity to – i

Xi = Service quality assessment score at the reality level.

Yi = Service quality assessment score at the expected level

The overall level of conformity of attributes, between the quality of educational services experienced and the expectations of UPT SMAN 2 Makassar students, can be seen in Table 6.

**Table 6.** Overall Attribute Conformity Level, between the Quality of Physics Learning Services Experienced and the Expectations of UPT SMAN 2 Makassar Students

| Quality of Service | Weight | Conformity Level |
|---|---|---|
| Performance | 35.326 | 92.02 |
| Importance | 38.370 | |

Table 6 shows that the percentage of the level of conformity between the quality of physics learning services experienced and expected by UPT SMAN 2 Makassar students, as a whole is in the range of 66% - 99%, meaning that it is in the category of "Less Satisfied".

*Cartesian Diagram Analysis IPA*

The relationship between the level of expectation and the level of reality of educational services felt by students can be seen through the Cartesian diagram. The diagram is divided into four parts. The division of the area is based on the intersection of 2 lines perpendicular to the points $\bar{X}$ and $\bar{Y}$, which is obtained by the formula:

$$\bar{X} = \frac{\sum_{i=1}^{n} \bar{X}i}{B} \text{ dan } \bar{Y} = \frac{\sum_{i=1}^{n} \bar{Y}i}{B} \quad (3)$$

Information:
$\bar{X}$= Average score of education service quality at the actual level
$\bar{Y}$= Average score of education service quality at the expected level
B = The number of items of statements

Based on this formula, the average score of the quality of physics learning services at UPT SMAN 2 Makassar at the reality level is 3.01 and the average quality score of physics learning services at the expected level is 3.28. The average is used as the axis cut-off point in the Cartesian diagram.

*Interpretation Results Per Dimension*

The results of the calculation of the average per dimension of service quality in physics learning at UPT SMAN 2 Makassar, can be seen in table 7.

**Table 7.** Results of Average Calculation per Dimension of Physics Learning Service Quality UPT SMAN 2 Makassar

| Dimension | Performance | Importance |
|---|---|---|
| Tangible | 2.91 | 3.21 |
| Reliability | 3.04 | 3.29 |
| Responsivness | 2.97 | 3.22 |
| Assurance | 3.03 | 3.29 |
| Emphaty | 3.12 | 3.4 |
| Average | 3.01 | 3.28 |

Based on the table, the analysis of IPA per dimension of the quality of physics training services against the quadrants contained in the science cartesian diagram can be seen in Figure 2.

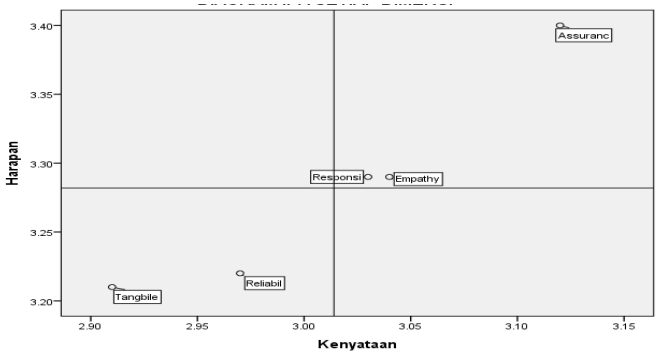


**Figure 2**. Science Diagram of Each Dimension of Service Quality in Physics Learning UPTD SMAN 2 Makassar

The following interpretations and implications of the quadrants contained in the cartesian diagram can be seen in Table 8.

**Table 8**. Interpretation and Implications of the Quadrant of Science Diagram Service Dimensions in Physics Learning UPT SMAN 2 Makassar

| Quadrant | Interpretation and Implications |
|---|---|
| Quadrant A | Showing the dimensions of service quality that are of high value at the expected level but low value in reality. There is no dimension of service in this quadrant. |
| Quadrant B | Showing the dimensions of service quality that are of high value at the expected level and have a high score on the reality of the service. There are three dimensions of service in this quadrant, namely the dimensions of assurance, emphaty and responsiveness. In other words, the services provided are in accordance with the expectations desired by students so that they need to be maintained |
| Quadrant C | Showing the dimensions of service quality where the expectation score and the reality of the service are of low value. In other words, this dimension is considered less important, while the quality of implementation is ordinary or sufficient. This means that the quality of service and student expectations are at a low level. The Reliability and Tangible dimensions are in this quadrant and for its development it is a low priority. |
| Quadrant D | Showing the dimensions of the quality of educational services that have a low score at the expected level but have a high score on the reality side of the service so that it is considered excessive. There are no dimensions that are in this quadrant. |

*Interpretation Results Per Attribute*

The results of the average calculation of all service quality attributes in physics learning at UPT SMAN 2 Makassar, can be seen in Table 9.

**Table 9**. Average Reality and Expectations Per Attribute

| Dimention | No Item | Performance | Importance |
|---|---|---|---|
| Tangible | 1 | 2.84 | 3.13 |
| | 2 | 2.79 | 3.16 |
| | 3 | 2.76 | 3.22 |
| | 4 | 2.91 | 3.28 |
| | 5 | 3.19 | 3.36 |
| | 6 | 2.91 | 3.08 |
| | 7 | 2.97 | 3.22 |
| Emphaty | 8 | 3.13 | 3.32 |
| | 9 | 3.14 | 3.47 |
| | 10 | 3.13 | 3.39 |
| | 11 | 2.96 | 3.22 |
| | 12 | 3.11 | 3.44 |
| | 13 | 2.86 | 3.02 |
| | 14 | 3.06 | 3.31 |
| | 15 | 2.91 | 3.19 |
| Reliability | 16 | 2.95 | 3.31 |

| Dimention | No Item | Performance | Importance |
|---|---|---|---|
| | 17 | 2.82 | 3.35 |
| | 18 | 3.02 | 3.28 |
| | 19 | 2.94 | 3.27 |
| | 20 | 2.94 | 3.14 |
| | 21 | 2.85 | 3.15 |
| | 22 | 2.95 | 3.00 |
| | 23 | 3.19 | 3.31 |
| | 24 | 3.04 | 3.22 |
| Responsiveness | 25 | 3.08 | 3.26 |
| | 26 | 3.12 | 3.39 |
| | 27 | 2.96 | 3.36 |
| | 28 | 2.98 | 3.14 |
| | 29 | 3.00 | 3.36 |
| | 30 | 3.03 | 3.31 |
| | 31 | 3.02 | 3.21 |
| | 32 | 3.05 | 3.32 |
| Assurance | 33 | 3.17 | 3.42 |
| | 34 | 2.95 | 3.29 |
| | 35 | 3.08 | 3.36 |
| | 36 | 3.29 | 3.5 |
| | 37 | 3.22 | 3.38 |
| | 38 | 3.28 | 3.44 |
| | 39 | 3.17 | 3.41 |
| Average | | 3.01 | 3.28 |

Furthermore, if you look at the results of the quadrant analysis, the quality of physics learning services at UPT SMAN 2 Makassar, is presented in the science cartesian digram in Figure 3.

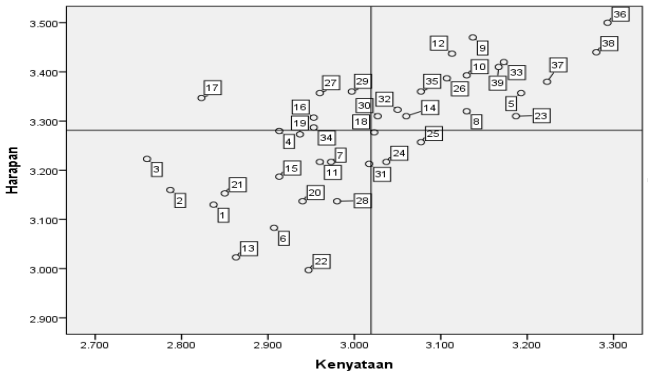


**Figure 3.** Science Diagram of Each Item of Physics Learning Service Quality at UPT SMAN 2 Makassar

The following interpretations and implications of the quadrants contained in the cartesian diagram can be seen in Table 10.

**Table 10**. Interpretation and Implications of Item-Per-Item Analysis Cartesian Diagram

| Quadrant | Interpretation and Implications |
|---|---|
| Quandrant A | The attributes in this quadrant are considered important by students but in reality are not in accordance with the students' wishes. This attribute has a high average score in terms of expectations but has a low average score in terms of reality. There are 5 attributes in this quadrant, including attributes number 16, 17, 27, 29, and 34. |
| Quadrant B | The attributes in this quadrant are considered important by students and have been implemented well by the school. Therefore, schools must maintain performance on these attributes because these attributes make the service superior in the eyes of students. There are 16 attributes in this quadrant, including number attributes 5, 8, 9, 10, 12, 14, 23, 26, 30, 32, 33, 35, 36, 37, 38, and 39. |
| Quadrant C | The attributes in this quadrant are considered less important by students. These attributes have a low score in terms of expectations and the reality that students experience. The attributes in this quadrant have less effect on student satisfaction. Aspects that fall into this group can be ignored by schools in the future. There are 15 attributes in this quadrant, including number attributes 1, 2, 3, 4, 6, 7, 11, 13, 15, 19, 20, 21, 22, 28 and 31. |
| Quadrant D | The attributes in this quadrant are considered less important by students but the school has carried out very well or in other words very satisfying, so that students consider school services to be too excessive. There are 3 attributes in this quadrant, including number attributes 18, 24 and 25. |

The analysis of student satisfaction with the quality of service in physics learning in the implementation of the independent curriculum at UPT SMAN 2 Makassar, was carried out by using the Customer Satisfaction Index (CSI). In this study, CSI is used to determine the level of student satisfaction per dimension and attributes as a whole, with an approach that considers the level of expectations and reality of the service quality attributes measured. The data from the research results regarding the analysis of student satisfaction with the quality of service in physics learning in the implementation of the independent curriculum at UPT SMAN 2 Makassar as a whole can be seen in Table 11.

**Table 11**. Overall CSI Analysis

| Dimention | No. Item | MSS | MIS | WF | WS | CSI % | Criteria |
|---|---|---|---|---|---|---|---|
| Tangible | 1 | 2.84 | 3.13 | 2.45 | 6.94 | 72.81 | Satisfied |
| | 2 | 2.79 | 3.16 | 2.47 | 6.88 | | |
| | 3 | 2.76 | 3.22 | 2.52 | 6.95 | | |
| | 4 | 2.91 | 3.28 | 2.56 | 7.47 | | |
| | 5 | 3.19 | 3.36 | 2.62 | 8.38 | | |

| Dimention | No. Item | MSS | MIS | WF | WS | CSI % | Criteria |
|---|---|---|---|---|---|---|---|
| | 6 | 2.91 | 3.08 | 2.41 | 7.00 | | |
| | 7 | 2.97 | 3.22 | 2.51 | 7.47 | | |
| | 8 | 3.13 | 3.32 | 2.59 | 8.12 | 76.06 | Satisfied |
| | 9 | 3.14 | 3.47 | 2.71 | 8.51 | | |
| | 10 | 3.13 | 3.39 | 2.65 | 8.30 | | |
| Empathy | 11 | 2.96 | 3.22 | 2.51 | 7.44 | | |
| | 12 | 3.11 | 3.44 | 2.69 | 8.36 | | |
| | 13 | 2.86 | 3.02 | 2.36 | 6.77 | | |
| | 14 | 3.06 | 3.31 | 2.59 | 7.92 | | |
| | 15 | 2.91 | 3.19 | 2.49 | 7.26 | | |
| | 16 | 2.95 | 3.31 | 2.58 | 7.63 | 74.17 | Satisfied |
| | 17 | 2.82 | 3.35 | 2.62 | 7.38 | | |
| Reliability | 18 | 3.02 | 3.28 | 2.56 | 7.74 | | |
| | 19 | 2.94 | 3.27 | 2.56 | 7.51 | | |
| | 20 | 2.94 | 3.14 | 2.45 | 7.21 | | |
| | 21 | 2.85 | 3.15 | 2.46 | 7.02 | | |
| | 22 | 2.95 | 3.00 | 2.34 | 6.90 | | |
| | 23 | 3.19 | 3.31 | 2.59 | 8.24 | 75.67 | Satisfied |
| | 24 | 3.04 | 3.22 | 2.51 | 7.63 | | |
| | 25 | 3.08 | 3.26 | 2.54 | 7.83 | | |
| | 26 | 3.11 | 3.39 | 2.65 | 8.22 | | |
| | 27 | 2.96 | 3.36 | 2.62 | 7.76 | | |
| Responsiveness | 28 | 2.98 | 3.14 | 2.45 | 7.30 | | |
| | 29 | 3.00 | 3.36 | 2.63 | 7.87 | | |
| | 30 | 3.03 | 3.31 | 2.59 | 7.83 | | |
| | 31 | 3.02 | 3.21 | 2.51 | 7.58 | | |
| | 32 | 3.05 | 3.32 | 2.60 | 7.92 | | |
| | 33 | 3.17 | 3.42 | 2.67 | 8.48 | 79.21 | Satisfied |
| | 34 | 2.95 | 3.29 | 2.57 | 7.59 | | |
| | 35 | 3.08 | 3.36 | 2.63 | 8.08 | | |
| Assurance | 36 | 3.29 | 3.50 | 2.74 | 9.01 | | |
| | 37 | 3.22 | 3.38 | 2.64 | 8.51 | | |
| | 38 | 3.28 | 3.44 | 2.69 | 8.82 | | |
| | 39 | 3.17 | 3.41 | 2.66 | 8.44 | | |
| Total (∑) | | | | | 302.27 | | |

Based on the results of data processing, the CSI value at UPT SMAN 2 Makassar was 75.57%. So it can be concluded that the level of student satisfaction with the quality of services in physics learning in the implementation of the independent curriculum at UPT SMAN 2 Makassar is at the "satisfied" criteria. The assurance dimension gives the highest satisfaction at 79.21%, followed by the emphaty dimension (empathy) (76.06%), the responsivity dimension (responsiveness) (75.67%), the reliability dimension (reliability) (74.17%) and the tangible dimension (physical evidence) (72.81%). Meanwhile, if reviewed from the analysis of IPA, the dimensions of assurance, emphaty, and responsiveness are in quadrant B, while the reliability and tangible dimensions are in quadrant C.

The results of the IPA analysis show that in the assurance dimension there is 1 attribute that is in the A quadrant, namely the P34 attribute while other attributes such as P33, P35, P36, P37, P38 and P39 are in the B quadrant. This shows that although the assurance dimension has the highest level of CSI value compared to other dimensions, it turns out that there is still 1 attribute that is the top priority and should be a special concern for physics educators at UPT SMAN 2 Makassar to be improved. These attributes basically measure students' satisfaction in obtaining information related to clear assessment criteria from physics educators.

Transparent assessment is important in order to produce an objective and true assessment of the student's condition, one of which is to inform or inform the assessment criteria for students (Waluyo et al., 2018). Therefore, the author suggests that physics educators can provide information about the assessment criteria to students. The submission of assessment criteria can be submitted at the beginning of the semester or during the ongoing learning process.

The attributes of P35 to 38 are related to the attitudes and approaches of physics educators used during teaching in the classroom. This is related to the DISPO (Positive Discipline) approach in the independent curriculum. Souisa et al. (2022) explained that the application of positive discipline emphasizes

dialogue between teachers and students, not monologues. This means that by implementing this approach, it is hoped that there will be two-way communication between educators and students during the learning process. In addition, positive discipline also teaches adults (in this case, educators) to be friendly and firm instead of being rude and permissive.

The positive discipline method is a program designed to educate young people to become responsible, polite, and intelligent members of society (Nelsen, 2016). Positive discipline encourages children to choose kind and respectful behaviors, not because of incentives or punishments, but because of the motivation that comes from themselves (Febriandari, 2018). According to Durrant (2016) in his presentation at the "Australasian Conference on Child Abuse and Neglect", positive discipline is about the efforts of parents/educators in strengthening relationships with children, understanding children's perspectives, building empathy, promoting self-regulation, reducing punishment, strengthening trust, and facilitating problem solving.

The results of the science analysis for the emphaty dimension (empathy) showed a positive response for several attributes, namely P8, P9, P10, P12 and P14 because they were in quadrant B. These attributes basically measure how physics educators are empathetic to students during the learning process which can be seen from the way they behave and communicate with students.

The dimension of service that provides satisfaction to students in the third position is the dimension of responsiveness. In general, the attributes in this dimension are in the B quadrant, but if each attribute in this dimension is analyzed using a science analysis, several other attributes will be found that are located in other quadrants. These attributes are P27 and P29 are in quadrant A, attributes P28 and P31 are in quadrant C and P25 in quadrant D.

The attributes P27 and P29 are in quadrant A, so they need to be the top priority to be improved. These two attributes basically measure the ability of physics educators to be open to criticism and suggestions given by students as well as the speed and responsiveness of physics teachers in answering every student's question. According to Kurniadhy 2018). Having an attitude to be ready to help customers is another element that is also very important as an element that must be owned by every member in a company. Every complaint submitted to the company must still be made a main concern for anyone in the company.

In addition to responding to complaints, the speed and responsiveness of physics educators in answering students' questions is also considered important. This is because the speed and responsiveness of educators in answering every question asked by students reflects the competence possessed by educators. This is in line with article 28 of Government Regulation No. 19 of 2005, which contains, "Educators must have academic qualifications and competencies as learning agents, be physically and spiritually healthy, and have the ability to realize national education goals." From this statement, it can be seen that teachers are required to have proper competence, especially the ability to master the material taught.

The fourth dimension of the quality of physics learning services that provides the highest satisfaction is the reliability dimension. The results of the science analysis show that this dimension is in the C quadrant which means that students do not attach much importance to the attributes in this dimension. Although in general this dimension is in the C quadrant, if each attribute in this dimension is analyzed, it will be found that there are several attributes occupying the other quadrants, namely quadrants A and D. Quadrants are occupied by attributes P 16 and P17 while in quadrant D are occupied by P 18 and P24

In this study, the tangible dimension (physical evidence) which includes facilities and infrastructure at UPT SMAN 2 Makassar is in the last position when compared to the other four dimensions, which is 72.81%. This dimension is basically in quadrant C. But even so, if analyzed per attribute, it will be found that there is one attribute in quadrant B, namely the P5 attribute.

## Conclusion

Based on the results of data processing, the CSI value at UPT SMAN 2 Makassar was 75.57%. So it can be concluded that the level of student satisfaction with the quality of services in physics learning in the implementation of the independent curriculum at UPT SMAN 2 Makassar is at the "satisfied" criterion. The assurance dimension gives the highest satisfaction at 79.21%, followed by the emphaty dimension (empathy) (76.06%), the responsivity dimension (responsiveness) (75.67%), the reliability dimension (reliability) (74.17%) and the tangible dimension (physical evidence) (72.81%). Even so, physics educators must continue to improve the quality of service, especially in attributes whose service values are not satisfactory and maintain attributes that are considered very important by students.

**Acknowledgments**

The researcher would like to thank the supervisors who have guided the researcher during the research and at the time of compiling this article, the UPT SMAN 2 Makassar who has allowed the researcher to conduct research at the school, as well as all students of class X UPT SMAN 2 Makassar who have participated in collecting research data.

**Author Contributions**
Fahmi Hasbullah conceptualized research ideas, research methods, data collection and analysis. Kaharuddin Arafah and Mansyur guided the writing, review and editing, supervision and validation of the instruments used in the research.

**Funding**
This research uses private/independent funds

**Conflicts of Interest**
The author states that there is no conflict of interest

## References

Apriani, F., Syahrul, S., & Arafah, K. (2024). Analisis Kualitas Layanan Pembelajaran Kimia Dalam Implementasi Kurikulum Merdeka di SMAN 2 Makassar. *Dalton: Jurnal Pendidikan Kimia Dan Ilmu Kimia*, *7*(3). https://doi.org/10.31602/dl.v7i3.15928

Arikunto, S. (2013). *Prosedur Penelitian: suatu pendekatan praktik*. PT Rineka Cipta.

Aritonang, R. L. (2005). *Kepuasan Pelanggan, Pengukuran Dan Penganalisaan Dengan SPSS, edisi pertama, Jakarta*. Jakarta: Gramedia Pustaka Utama.

Baro'ah, S., Trisnawati, S. N. I., Ernawati, A., Supatminingsih, T., Aziz, F., Aziz, M., Astuti, R., Isma, A., & Hasyim, S. H. (2023). Kurikulum Merdeka: Inovasi Kurikulum di Indonesia. *Tahta Media*. Retrieved from https://tahtamedia.co.id/index.php/issj/article/view/39

Druxes, H. (1986). *Kopendium Didaktik Fisika*. Bandung: Remaja Karya.

Durrant, J. E. (2016). *Positive discipline in everyday parenting*. Save the Children Sweden Stockholm, Sweden. Retrieved from https://pdel.org/wp-content/uploads/2021/11/PDEP-Parent-Book-2016-4th-Edition_WEB_Revised.pdf

Febriandari, E. I. (2018). Penerapan metode disiplin positif sebagai bentuk pembinaan pendidikan karakter disiplin anak. *Karya Ilmiah Dosen*, *1*(1). Retrieved from https://journal.stkippgritrenggalek.ac.id/index.php/kid/article/view/132

Grönroos, C. (2007). *Service management and marketing: customer management in service competition*. John Wiley & Sons.

Ihsani, D. W. (2005). Analisis kepuasan konsumen terhadap atribut wisata cangkuang Garut, Jawa Barat [Skripsi: Departemen Ilmu-ilmu Sosial Ekonomi Pertanian, Fakultas Pertanian, IPB. Bogor]. In *Skripsi. Departemen Ilmu-ilmu Sosial Ekonomi Pertanian, Fakultas Pertanian, IPB. Bogor*. Retrieved from https://shorturl.asia/WBpjr

Kurniadhy, D. I. (2018). Excellent Service Untuk Meningkatkan Kepuasan Pelanggan Pada Bisnis Filateli. *Jurnal Manajemen Bisnis Indonesia*. Retrieved from https://shorturl.asia/Bd9PV

Lupiyoadi, R., & Hamdani, A. (2006). *Manajemen pemasaran jasa*. Language.

Martilla, J. A., & James, J. C. (1977). Importance-performance analysis. *Journal of Marketing*, *41*(1), 77–79. https://doi.org/10.1177/002224297704100112

Moenir, A. S. (2008). *Manajemen pelayanan umum di Indonesia*. Jakarta: Bumi Aksara.

Murdani, E. (2020). Hakikat Fisika Dan Keterampilan Proses Sains. *Jurnal Filsafat Indonesia*, *3*(3), 72–80. https://doi.org/10.23887/jfi.v3i3.22195

Nelsen, J. (2016). *Positive Dicipline: Creating Respectful relationship in Homes and Schools*. Retrieved from https://www.positivediscipline.com/about-positive-discipline

Nugroho, D. M. (2015). *Pengaruh kualitas pelayanan, kualitas produk layanan, dan harga produk layanan terhadap kepuasan pelanggan serta dampaknya terhadap loyalitas pelanggan prabayar telkomsel* [Thesis: Universitas Mercu Buana Jakarta-Menteng]. Retrieved from https://repository.mercubuana.ac.id/7239/

Parasuraman, A., Berry, L., & Zeithaml, V. (2002). Refinement and reassessment of the SERVQUAL scale. *Journal of Retailing*, *67*(4), 114. Retrieved from https://shorturl.asia/kGZX1

Pontjorini, R., Prima, G. Y., & Rochaety, E. (2005). *Sistem Informasi Manajemen Pendidikan*. Jakarta: Bumi Aksara.

Retnowati, T. H., Mardapi, D., Kartowagiran, B., & Suranto, S. (2017). Model evaluasi kinerja dosen: pengembangan instrumen untuk mengevaluasi kinerja dosen. *Jurnal Penelitian Dan Evaluasi Pendidikan*, *21*(2), 206–214. Retrieved from https://scholarhub.uny.ac.id/jpep/vol21/iss2/7/

Smith, R., & Ennew, C. (2001). *Service quality and its impact on word-of-mouth communication in higher education*. University of Nottingham in Malaysia, Division of Business and Management.

Souisa, J. H., Purwaningratri, M. A., Subagyo, S., Utami, S., & Alhuda, B. (2022). *Disiplin positif untuk Merdeka Belajar: strategi penerapan pada jenjang SMA*. Direktorat Sekolah Menengah Atas. Retrieved from https://repositori.kemdikbud.go.id/29142/

Supranto, J. (2018). *Pengukuran tingkat kepuasan pelanggan*. Rineka Cipta.

Tjiptono, F., & Chandra, G. (2016). *Service, quality dan satisfaction*. Yogyakarta: Andi Offset.

Triatna, C., & Komariah, A. (2005). *Visionary leadership menuju sekolah efektif*. Jakarta: PT Bumi Aksara.

Waluyo, S. P., Halini, H., & Bistari, B. (2018). Pengaruh

pembelajaran dengan penilaian secara transparan terhadap hasil belajar peserta didik kelas XII IPA SMA. *Jurnal Pendidikan Dan Pembelajaran Khatulistiwa (JPPK)*, *7*(4). Retrieved from https://shorturl.asia/OuIjD

Wijaya, T. (2018). *Manajemen Kualitas Jasa, Edisi Kedua*. Jakarta: PT. Indeks.

.