

DOCUMENT

C12 Antuni Wiyarsi

SCORE

64 of 100

ISSUES FOUND IN THIS TEXT

150

PLAGIARISM

1%

Contextual Spelling

19

Misspelled Words

10 

Confused Words

9 

Grammar

49

Determiner Use (a/an/the/this, etc.)

26 

Faulty Subject-Verb Agreement

11 

Wrong or Missing Prepositions

4 

Incorrect Verb Forms

3 

Conjunction Use

1 

Modal Verbs

1 

Incorrect Noun Number

1 

Faulty Tense Sequence

1 

Incorrect Phrasing

1 

Punctuation

14

Comma Misuse within Clauses

5 

Punctuation in Compound/Complex Sentences

5 

Closing Punctuation

4 

Sentence Structure

5

Incomplete Sentences


3 

Misplaced Words or Phrases

2 

Style

63

Passive Voice Misuse	32	
Wordy Sentences	15	
Improper Formatting	10	
Unclear Reference	6	

Vocabulary enhancement

 No errors

C12 Antuni Wiyarsi

Chemistry Learning: Perception and Interest of Vocational High School Student of Automotive Engineering Program

Abstract. This study explored the implementation of chemistry learning in vocational high school in terms of ¹ interest and perception of students of Automotive Engineering Program. Descriptive studies have been ² conducted. There are 112 students of automotive engineering as research samples from one public vocational high school in Yogyakarta. Samples were ³ determined by cluster sampling technique. Two ⁴ instruments were used to collect the data, ⁴ namely closed questionnaire for perception and open questionnaire for interest. Perception ⁵ questionnaire ⁶ have ⁷ 20 items statement, while the interest questionnaire have ⁸ ⁹ open ended ¹⁰ questions. The data of perception were analyzed descriptively quantitatively with the ideal rating category. Interest data was analyzed qualitatively by analyzing the answers of the research subjects, coding the answers and grouping them into specific ¹¹ theme. The results showed that most vocational high school students of automotive engineering are not interested in chemistry subjects ¹². The biggest cause of disinterest because the student just want to focus on vocational ¹³ materials, chemistry unrelated to the automotive ¹⁴ field, learning is not interesting ¹⁵, and chemistry is difficult to understand ¹⁶. In general, the perception of vocational high school students on ¹⁷ learning chemistry is sufficient. In particular, student perceptions ¹⁸ are good ¹⁹ for teacher role indicator and sufficient ²⁰ category for indicators of student engagement and meaningfulness of learning. The important implications for the development of chemistry learning in the context of vocational are discussed ²¹.

Key words ²²: chemistry learning, interest, student

¹ [in terms of → regarding]

² Passive voice

³ Passive voice

⁴ Unoriginal text: 8 words
worldsciencepublisher.org/journals/..

⁵ Repetitive word: *perception*

⁶ Repetitive word: *questionnaire*

⁷ [have → has]

⁸ [have → has]

⁹ [6 → six]

¹⁰ [open-ended → open-ended]

¹¹ [a specific or the specific]

¹² Repetitive word: *subjects*

¹³ Repetitive word: *vocational*

¹⁴ Repetitive word: *automotive*

¹⁵ Overused word: *interesting*

¹⁶ Overused word: *difficult*

¹⁷ [students on → students in]

perception, vocational high school

1. Introduction

The lowering of high school students' interest in chemistry is becoming a growing issue today. This ²³ also happens to vocational ²⁴ school students. Some of the engineering students lack motivation in chemistry learning [1]. This situation is certainly less profitable given the essence of chemistry learning ²⁶ in engineering vocational schools. ²⁵ Chemistry learning ²⁷ is a basic vocational ²⁸ subject given at vocational school of automotive ²⁹ engineering program. Chemistry subjects ³⁰ should be aimed ³¹ at not only understanding and mastering "what" and "how" a job is done, but also understanding about ³² "why" it should be done ³³. Mastery of chemistry certainly ³⁴ influences the development of vocational competencies of student ³⁵ in the future.

Low motivation also shows that students' interest in chemistry learning is low. Interest is key to the success of chemistry learning ³⁶. Interest is a unique psychological state that occurs during interaction between persons and their object of interest [2]. In the context of chemistry learning ³⁷, objects can be learning situations, learning content, teachers, learning ³⁸ resources and personal interaction. The main ³⁹ dimension of interest that generally ⁴⁰ gives more influence to student's interest in learning is personal interest ⁴¹. Personal interest was relatively stable interest associated with tend to enjoy or engagement with specific topics, subject areas, or activities [3, 4].

Students interest ⁴² in chemistry learning may be affected by different factors. A number of ⁴³ studies have pointed various factors responsible for declining students' interest. These factors include pedagogical aspects [5], content that taught [6], role ⁴⁴ of teacher, personal traits and choices [7] and prior learning experience [8]. Personal interest

¹⁸ Repetitive word: *perceptions*

¹⁹ Overused word: *good*

²⁰ Repetitive word: *sufficient*

²¹ Passive voice

²² Possibly miswritten word: *Key words*

²³ Unclear antecedent

²⁴ Repetitive word: *vocational*

²⁵ Incomplete comparison

²⁶ Repetitive word: *learning*

²⁷ Repetitive word: *learning*

²⁸ Repetitive word: *vocational*

²⁹ [the automotive or an automotive]

³⁰ Repetitive word: *subjects*

³¹ Passive voice

³² Incorrect spacing

³³ Passive voice

³⁴ Overused word: *certainly*

³⁵ [a student or the student]

³⁶ Repetitive word: *learning*

³⁷ Repetitive word: *learning*

³⁸ Repetitive word: *learning*

³⁹ Overused word: *main*

⁴⁰

development is related to personal ⁴⁵ traits ⁴⁶ of students.

The psychological dimension that affects individual nature is perception.

Perception ⁴⁸ refers to attaching meaning to environmental inputs received through the senses ⁴⁷ [9]. This perception ⁴⁹

is related to the ability of the student to give response either positive or negative to something received, viewed or felt. Previous studies have shown that vocational high school students have a perception that chemistry is irrelevant to the vocational ⁵⁰ field [1,10] This wrong perception is likely to be the cause of the low interest of vocational ⁵¹ high school students toward chemistry learning.

Whereas actually ⁵² a lot of chemistry content that is relevant to the field of vocational ⁵³. For example in the automotive engineering program, chemistry is applied in studying fuel, batteries, chemical materials, metals, electroplating and environmental pollution. Some factors can affecting ⁵⁴ of students' perception are something is being perceivece ⁵⁵, the context of the situation and personal experience [11], gender, ethnic background, experience, cognitive ability and grade level [12]. Thus it is necessary to further explore ⁵⁶ the perception of automotive engineering students on learning chemistry in terms of ⁵⁷ theories of learning perspective. Theoretical ⁵⁸ perspective on chemistry teaching includes content, learning activities and interpersonal perspective [13].

Student perceptions of the chemistry learning is ⁵⁹ important. Its ⁶⁰ can be reporting the ⁶¹ quality of interactions and processes of chemistry learning. This ⁶² is potentially an important measurement strategy for evaluating and developing of good ⁶³ chemistry learning ⁶⁴. Beyond providing firsthand impressions of the quality of student-teacher interactions and classroom processes, result of student observation possess naturally acquired expertise through their lived, everyday experiences in classrooms. Exploration of perception followed by an

⁴¹ [~~generally~~]
Repetitive word: *interest*

⁴² [~~interest~~ → ~~interested~~]

⁴³ [~~A number of~~ → ~~Some~~]

⁴⁴ [~~the role~~]

⁴⁵ Possibly confused word

⁴⁶ Repetitive word: *traits*

⁴⁷ Unoriginal text: 12 words

⁴⁸ prezi.com/lcknzq-k7c9e/learning-the...

⁴⁸ Repetitive word: *perception*

⁴⁹ Repetitive word: *perception*

⁵⁰ Repetitive word: *vocational*

⁵¹ Repetitive word: *vocational*

⁵² [~~actually~~]

⁵³ Repetitive word: *vocational*

⁵⁴ [~~affecting~~ → ~~affect~~]

⁵⁵ [~~perceivece~~ → ~~perceived~~]

analysis of interests and supporting factors an inhibitors ⁶⁵ perceived by students. Thus ⁶⁶ will get the whole decribe ⁶⁷ about what, how and implication of result of perception analysis of student of vocational ⁶⁸ high school of automotive ⁶⁹ engineering program to chemistry learning.

2. Research Method

Descriptive studies have been conducted ⁷⁰ in this research. There are 112 students of automotive engineering in 11th grade of academic year 2015/2016 and 2016/2017 as research samples. The samples ⁷¹ taken ⁷² from one of public vocational high school in Yogyakarta. It was the one of school laboratory of Universitas Negeri Yogyakarta. In Yogyakarta was only two public vocational high schools with automotive engineering study program. Samples were determined by cluster sampling technique ⁷³. Research data was taken ⁷⁴ from two instruments. Closed ⁷⁵ questionnaire that had four alternative options were used to obtain students' perception data on chemistry learning. Measured aspects were elaborated from the theoretical perspective in teaching [13] ⁷⁶ and dimension of tripod survey [14] According to [14] developed the Tripod student perceptions survey to measure teaching quality. The "tripod" describes the component of learning effectiveness i.e ⁷⁷ (a) content knowledge, (b) pedagogic knowledge and skills, and (c) the ability to connect with students on a personal level. In other hand ⁷⁸, [13] stated that quality of teaching can ⁷⁹ be measured based on content, learning activities and interpersonal perspective. Based on the two theories, aspects of perception questionnaire were developed ⁸⁰. There were ⁸¹ three aspects ⁸² i.e ⁸³ students engagement (with six indicators), meaningfulness of learning (nine indicators) and role of teacher (five indicators ⁸⁴). Totally, the ⁸⁵ questionnaire had 20 items of statements. The second instrument was open questionnaire with six questions. The questions were

⁵⁶ Split infinitive

⁵⁷ [~~in terms of~~ → regarding]

⁵⁸ [~~Theoretical~~ → Theoretical]

⁵⁹ [~~is~~ → are]

⁶⁰ Possibly confused word

⁶¹ [~~reporting the~~ → reporting the]

⁶² Unclear antecedent

⁶³ Overused word: *good*

⁶⁴ Repetitive word: *learning*

⁶⁵ [~~an inhibitors~~ → inhibitors]

⁶⁶ Possibly confused word

⁶⁷ [~~decribe~~ → describe]

⁶⁸ [~~the vocational~~]

⁶⁹ [~~the automotive~~]

⁷⁰ Passive voice

⁷¹ [samples **are** or samples **were**]

⁷² [~~taken~~ → were taken]

developed⁸⁶ emphasized in personal interest as the one of dimension^{88 87} of student's interest in learning [3, 4] and the factor that affected students interest in chemistry learning⁸⁹ [15]. The instruments were judgemented⁹⁰ to chemistry learning experts to ensure the accuracy of them. Analysis of quantitatively descriptive was used to determine the category of students' perception. The steps of data analysis were calculate⁹¹ the mean score both in total or each aspect of students' perception⁹², and then categorize the measurement result based on ideal scoring criteria. The criteria⁹³ were very good⁹⁴, good, sufficient, less good and very bad. Interest data was analyzed qualitatively by analyzing the answers of the research subjects, coding the answers and grouping them into specific⁹⁵ theme and also displayed in percentage.

3. Result and Discussion

3.1 Perception of Vocational High School Students to Chemistry Learning

Vocational high school students' responses to the 20 items of perception⁹⁶ questionnaire have mean⁹⁷ score of 52, 84; meanwhile⁹⁸ the ideal score is 80. This value be¹⁰⁰ categorized⁹⁹ in sufficient¹⁰¹. The distribution of percentage¹⁰² of student perception category is displayed¹⁰³ in Figure 1. Most of students¹⁰⁴ in automotive study program have a perception¹⁰⁵ in sufficient^{107 106} category¹⁰⁸ to chemistry learning. Among 23.21% students have a good¹⁰⁹ perception¹¹⁰ and only 4, 46% students in very good^{112 111} perception¹¹³ about chemistry learning¹¹⁴ in vocational school. In¹¹⁵ the other hand, there are about 13.39% students that have less¹¹⁶ good¹¹⁷ perception¹¹⁸ to chemistry learning^{120.. 119}

Figure 1. The Disribution¹²¹ of Percentage of students in the categories of perception

73
Passive voice

74
Passive voice

75
[Closed → The closed]

76
[13,]

77
[i.e → i.e.]

78
[other hand → another hand]

79
[can → could]

80
Passive voice

81
[were → was]

82
Repetitive word: *aspects*

83
[i.e → i.e.]

84
Repetitive word: *indicators*

85
[Totally, the → The]

86
Passive voice

87
[of-dimension → of dimension]

88
[the dimension or a dimension]

89
Repetitive word: *learning*

90
[judgemented → judgement]

91

Perception ¹²² of vocational high school students was explored to know the extent of successful implementation of chemistry learning according to student opinions.. ¹²³ The results showed that there are still vocational ¹²⁴ high school students of automotive program students who have poor ¹²⁵ perception to chemistry learning ¹²⁶. It indicates that there are still deficiencies in the implementation of chemistry learning ¹²⁷ in vocational high school. Students' perception ¹²⁸ is related to the process of attaining awareness or understanding of sensory information in their learning ¹²⁹. But the ability of each student to respond to the stimulus is not the same. There are students who are ¹³⁰ very easy to accept something new ¹³¹ and there is a relatively long time. Ease is not independent of the readiness of students in following the learning. Students with conditions that are not ready both physically and psychically tend to not enjoy the situation ¹³². It is given the impact to students' perception of the learning situation.. ¹³³ The perception of students is also influenced ¹³⁴ by the condition of the stimulus. It is in the form of components of chemistry learning ¹³⁵. The classroom atmosphere, the character of the subject matter and the classroom interactions clearly ¹³⁶ affect how students view the whole the chemistry learning ¹³⁷. Not good ¹³⁸ interaction of students and teachers tends to cause negative perceptions for students'. This tendency will be more visible if the content is delivered ¹³⁹ in the learning does not match the needs of vocational students, Vocational School students tend to appreciate more positively on vocational subjects. Acccroding ¹⁴⁰ to [16] if students do not form a positive ¹⁴² connection with their teacher, it is within their control to minimally learn core content or refuse to learn anything at all. ¹⁴¹ Positive relationships that are not formed ¹⁴³ in learning chemistry will affect the willingness of vocational high school

[were calculate → calculated]

⁹² Repetitive word: *perception*

⁹³ Repetitive word: *criteria*

⁹⁴ Weak adjective: *good*

⁹⁵ [a specific or the specific]

⁹⁶ Repetitive word: *perception*

⁹⁷ [a mean or the mean]

⁹⁸ [meanwhile,]

⁹⁹ Passive voice

¹⁰⁰ [be → is]

¹⁰¹ Possibly miswritten word: *in sufficient*

¹⁰² [the percentage or a percentage]

¹⁰³ Passive voice

¹⁰⁴ [the students]

¹⁰⁵ Repetitive word: *perception*

¹⁰⁶ Possibly miswritten word: *in sufficient*

¹⁰⁷ Repetitive word: *sufficient*

¹⁰⁸ Repetitive word: *category*

¹⁰⁹ Overused word: *good*

¹¹⁰ Repetitive word: *perception*

¹¹¹ Weak adjective: *good*

¹¹² Overused word: *good*

¹¹³ Repetitive word: *perception*

¹¹⁴ Repetitive word: *learning*

¹¹⁵ Possibly confused preposition

¹¹⁶ [the less]

¹¹⁷ Overused word: *good*

¹¹⁸ Repetitive word: *perception*

¹¹⁹ [learning./ → learning.]

¹²⁰ Repetitive word: *learning*

¹²¹ [Disribution → Distribution]

¹²²

students to learn chemistry better. It becomes the task of the chemistry teacher to establish a positive interaction in chemistry learning. Thus the perception of students of vocational high students becomes better. This ¹⁴⁴ is very important considering that student perceptions of the learning environment are likely indicative of the motivational aspects of classrooms [17].

Figure 2. Categories of students' perception in each aspect

The study of vocational high school students' perceptions on chemistry learning ¹⁴⁵ is sharpened ¹⁴⁶ by analyzing each aspect in perception ¹⁴⁷. It ¹⁴⁸ can be known in more detail things that are perceived well or enough. Figure 2 presents the categories of students' perceptions for each aspect. Aspects of students' engagement and meaningfulness of learning were perceived ¹⁵⁰ ¹⁴⁹ sufficient by students. As for the aspect ¹⁵¹ of role ¹⁵² teacher, the student have ¹⁵³ a good perception. Good students' perceptions of the role of teachers indicate that chemistry teachers in vocational high schools have successfully established positive relationships with students. Students feel comfortable because they be noticed ¹⁵⁵ ¹⁵⁴ and their teachers give a scaffolding when they need it. This ¹⁵⁶ is supported ¹⁵⁷ by previous research which states that students' perceptions of teachers have an effect on ¹⁵⁸ learning motivation [18]. This factor becomes the main ¹⁵⁹ basic ¹⁶⁰ to realize the expected quality of chemistry learning. In regulating student learning, teachers are considered to be the crucial part of the reform process [19]. Teachers must continue to develop themselves in order to ¹⁶¹ play a better role as part of the ¹⁶² process ¹⁶³ of improving the quality of chemistry

123 Repetitive word: *perception*
[*opinions.,/* → *opinions.*]

124 Repetitive word: *vocational*
125 [*the poor*]

126 Repetitive word: *learning*

127 Repetitive word: *learning*

128 Repetitive word: *perception*

129 Repetitive word: *learning*

130 Wordiness

131 [*new,*]

132 Split infinitive

133 [*situation.,/* → *situation.*]

134 Passive voice

135 Repetitive word: *learning*

136 [*clearly*]

137 Repetitive word: *learning*

138 Overused word: *good*

139 Passive voice

140 [*Acceroding* → *According*]

141 Unoriginal text: 28 words

142 www.marshallmemo.com/issue.php...
Overused word: *positive*

143 Passive voice

education.

The other aspect are ¹⁶⁴ perceived poorly by the students. Student engagement is relatively better perceived ¹⁶⁶ ¹⁶⁵ by students of vocational ¹⁶⁷ high school. This aspect ¹⁶⁸ describes that in the chemistry learning the teacher emphasizes student activity. Teachers engage students in identifying essential concepts, discussions, frequently asked questions and self-assignments. This learning is more be opened to the students' minds to engage ¹⁶⁹ in constructing knowledge. Active learning such as problem-based learning provide ¹⁷⁰ students with opportunities to reflect and engage ¹⁷¹ in feedback processes, ¹⁷² so that students feel comfortable learning by experience . ¹⁷³ According to [20] stated that active learning increases the self-efficacy and understanding concept of vocational high school students.

The lowest category of student perception is in the meaningfulness learning aspect that emphasizes in the meaningful of chemistry content. This ¹⁷⁴ can't be underestimated ¹⁷⁵ because the content becomes the main ¹⁷⁶ object that students will learn. If the students' appreciation of the content ¹⁷⁷ taught is not good ¹⁷⁸ then it is feared will have an impact on chemistry learning process and result. Previous studies has ¹⁷⁹ shown that low ¹⁸⁰ chemistry achievers became less optimistic about the relevance of chemistry to nursing as the course proceeded [10].

3.2 Description ¹⁸¹ of Vocational High School Students' interest in chemistry learning

Interest ¹⁸² of vocational high school of automotive students to ¹⁸³ chemistry learning ¹⁸⁴ is analyzed based on students' answers to open questions. The six questions related to interest and whether, difficulties, frequency ¹⁸⁵ of learning, beliefs of usefulness, and expectations related content and learning strategies. The analysis results are

144 Unclear antecedent

145 [perceptions on → perceptions of]
146 Passive voice
147 Repetitive word: *perception*
148 [it → It]

149 Passive voice
150 Repetitive word: *perceived*
151 Repetitive word: *aspect*
152 [~~of-role~~ → of role]
153 [~~have~~ → has]

154 Passive voice
155 [noticed,]
156 Unclear antecedent
157 Passive voice
158 [~~have-an-effect-on~~ → affect]
159

discussed ¹⁸⁶ for each question

¹⁶⁰ Overused word: *main*
Overused word: *basic*

3.2.1. Question 1:” Are you interested in studying chemistry more?”

The results show that most of the vocational high school students of automotive engineering are not interested in chemistry subject. As many as 84.38% of vocational ¹⁸⁷ students of automotive engineering program are not interested in studying chemistry (Figure 3). Various reasons put forward by students as the cause of such disinterest.

¹⁶¹ [*in-order-to* → *to*]
¹⁶² Repetitive word: *part*
¹⁶³ Repetitive word: *process*
¹⁶⁴ [*are* → *is*]
¹⁶⁵ Passive voice
¹⁶⁶ Repetitive word: *perceived*
¹⁶⁷ [*the vocational* or *a vocational*]
¹⁶⁸ Repetitive word: *aspect*

Figure 3. Percentage of students interest

The biggest cause of disinterest because the student just want to focus on vocational materials, chemistry unrelated to the automotive field, learning is not interesting ¹⁸⁸, and chemistry is difficult to understand ¹⁸⁹. Learning content factor becomes the main ¹⁹⁰ problem to explore student interest in vocational high school. The selection of inappropriate chemistry content causes the students not to be interested in learning. Chemistry is only considered a compulsory subject that is not relevant to the field of student's vocational. These results have implications for the need for chemistry teachers in vocational high school to map out relevant chemistry learning content to the automotive field. For example the problem of gasoline and diesel fuel in the discussion of petroleum. Likewise, learning about the fraction of petroleum ¹⁹¹ in the form of lubricants. Recent studies have shown that the transfer of chemistry to the engineering education context and its material should be presented in a familiar and related context [21]. Context ¹⁹² in learning in vocational schools is of course associated ¹⁹³ with student vocational ¹⁹⁴ competence. ¹⁹⁵ Context-based learning in vocational ¹⁹⁶ schools improves the positive attitude, interest ¹⁹⁷ and

¹⁶⁹ Repetitive word: *engage*
¹⁷⁰ [*provide* → *provides*]
¹⁷¹ Repetitive word: *engage*
¹⁷² [*processes,*]
¹⁷³ [*experience-* → *experience.*]
¹⁷⁴ Unclear antecedent
¹⁷⁵ Passive voice
¹⁷⁶ Overused word: *main*
¹⁷⁷ Repetitive word: *content*
¹⁷⁸ Overused word: *good*
¹⁷⁹ [*has* → *have*]
¹⁸⁰ Overused word: *low*

meaningfulness of learning for students [1, 22, 23].

Interest is a specific ¹⁹⁸ quality that is individual. Previous research states that vocational field of learning is one important dimensions ¹⁹⁹ for developing students' interest in science [6, 24]. The results indicate that teachers are more emphasis on basic ²⁰⁰ chemisry ²⁰¹ theories and do not provide applicative subject matter which is directly related to the students' vocational competencies.

The next cause is related to chemistry learning that students find unattractive. According to [5] states that pedagogical issues are the main factors affecting students' interest in learning a particular subject. Teachers must be able to choose the right learning strategy in accordance with ²⁰² the character of the subject matter and the ²⁰³ student. Characteristics of vocational education is ²⁰⁴ the emphasis on practical work. Vocational high school students will tend to get bored if the teacher just lectures and gives practice questions. Vocational ²⁰⁵ students need to be invited to explore to construct their own ²⁰⁶ knowledge. This ²⁰⁷ is in line with the results of [7] research which states that although teachers were not a major ²⁰⁸ cause for declining students' interest in chemistry, but students' ²⁰⁹ interest could be enhanced ²¹⁰ by appropriate approaches of pedagogical techniques.

In other hand ²¹¹, the small part of vocational school students expressed interest in chemistry subjects. The reasoning of it are ²¹² ; (1) chemistry is important to learn. (2) want ²¹³ to understand chemistry applications; (3) chemistry is interesting (4) chemistry support areas of expertise. These factor ^{215 214} should be developed ²¹⁶ so that it will affect all students of vocational ²¹⁷ high school. How teachers package the content and how to deliver subject matter in learning so as to ²¹⁸ foster students' awareness of the importance of chemistry in support of vocational competencies.

181
[Decription → Description]

182
[Interest → The interest]

183
[students-to → students to]

184
Repetitive word: *learning*

185
[the frequency or a frequency]

186
Passive voice

187
Repetitive word: *vocational*

188
Overused word: *interesting*

189
Overused word: *difficult*

190
Overused word: *main*

3.2.2. Question 2: "Is chemistry a difficult 219 lesson?"

Figure 4. Students' opinions about the difficulty of chemistry

The next question is about whether chemistry is difficult or not. The results of the analysis in Figure 4 show that most of automotive 220 engineering vocational students state that chemistry is difficult 221. According to student answers, the source of difficulty lies in the number of formulas and terms that must be memorized 222. Based on the content characteristic 223, chemistry involves different terminologies, structures 224 and calculations. The learning of these elements may cause difficulties for the students. The teacher's job is to convey the subject matter as clearly as possible with the appropriate assistance for the individual, The 225 process is expected to overcome the learning difficulties experienced by students.

3.2.3. Question 3: "When do you study chemistry? Is it every day?"

The low 226 data of student interest in learning chemistry is supported 227 by the frequency data of learning 228. The results of the analysis show that 84% of students stated that they only study chemistry if they face repetition and if there is a task. As many as 15% of students study chemistry once a week, the night before a chemistry lesson and 1% of students say they never study chemistry at home, just remember what the teacher in class. This condition indicates that students have not looked at chemistry lessons as things to be mastered. The effort given by the students has not been maximized, just getting the value without perceiving the benefits. In addition to the results of less good 229 learning, this situation also affects

191 Repetitive word: *petroleum*

192 [~~Gontext~~ → The context]

193 Passive voice

194 Repetitive word: *vocational*

195 [~~competence.~~ → competence.]

196 Repetitive word: *vocational*

197 [interest,]

198 Overused word: *specific*

199 [~~dimensions~~ → dimension]

200 Overused word: *basic*

201 [~~chemisry~~ → chemistry]

202 [~~in accordance with~~ → by]

203 [~~and the~~ → and the]

204 [~~is~~ → are]

the not applied chemistry in solving automotive problems by students later in the world of work.

3.2.4. Question 4: "Are you sure that chemistry learning is useful for supporting your vocational competencies?"

The next question in the questionnaire is related to vocational high school students' belief in the benefits of chemistry learning. This benefit is attributed ²³⁰ to its support for achieving students' vocational ²³¹ competencies. As many as 87.5% of students stated sure the chemical would be beneficial. Other students as many as 10.7% said they were not sure and the rest did not answer. These results provide a good basic ²³² for developing quality chemistry learning. Students who are convinced ²³³ of the benefits of learning something will do their best to achieve success.

3.2.5. Question 5: "What content do you need to give in chemistry learning?"

Based on the results of the analysis of the fifth question ²³⁴, can be known what material is expected or suggested by students of vocational ²³⁵ high school to be studied ²³⁶ in chemistry learning. Most of students ²³⁷ expect the material taught in chemistry learning ²³⁸ is applicative and related to their skills. Nevertheless, the questionnaire data also shows that there are 18 students who do ²³⁹ not give an opinion, just state just follow what subject matter will ²⁴⁰ be given ^{242 241} according to the applicable ²⁴³ curriculum. The most answers to the chemistry subject matter ²⁴⁴ that students will learn in a row are fuel chemistry, lubricating oils, batteries, reactions to the battery, electrolyte solutions, elements and compounds, metals and their properties, chemical reactions and dangers, constituents of tires and accessories of vehicles and chemicals in the industry. Nevertheless, there is an interesting note from the student's answer, which is four students of vocational high

205 Repetitive word: *vocational*

206 [~~own~~]

207 Unclear antecedent

208 Overused word: *major*

209 [~~but students'~~]

210 Passive voice

211 [~~other hand~~ → *another hand*]

212 [~~are~~ → *is*]

213 [~~want~~ → *Want*]

214 [~~These factor~~ → *This factor*]

215 Possibly confused word

216 Passive voice

217 [~~the vocational~~ or *a vocational*]

218 [~~so as to~~ → *to*]

219 Overused word: *difficult*

220 [*the automotive*]

221 Overused word: *difficult*

students stated that no important ²⁴⁵ chemistry content is
learned ²⁴⁶ for vocational ²⁴⁷ students of automotive
engineering. The answer is very unintelligible because in
vocational ²⁴⁸ subjects students of vocational ²⁴⁹ automotive
engineering also got material about battery construction.

²²² Passive voice
²²³ Possibly confused word

²²⁴ [structures,]

3.2.6. Question 6:” What do you suggest for more
interesting ²⁵⁰ chemistry learning?”

²²⁵ [individual; ~~The~~ → individual; **The**]

In relation to ²⁵¹ the learning atmosphere, in open
questions, to make learning chemistry interesting and fun
they provide some suggestion. The answer of the
vocational student to the last question ²⁵² about the
expected learning strategy is quite varied. The ²⁵³ answer
with the most percentage is learning is balanced with the
practice of laboratory, the content is reduced and directly
applied in the automotive field. The next great answer is
that not to give countless ²⁵⁴ and theoretical homework
assignments. The third percentage is in ²⁵⁶ the answer ²⁵⁷
to ²⁵⁵ the need for special ²⁵⁸ textbooks, not just a few
copies. The next answer is learning made fun, group
learning as well as a friendly and communicative teacher
in learning.

²²⁶ Overused word: *low*
²²⁷ Passive voice
²²⁸ Repetitive word: *learning*

²²⁹ Overused word: *good*

230
Passive voice

231
Repetitive word: *vocational*

232
Possibly confused word

233
Passive voice

234
Repetitive word: *question*

235
[the vocational]

236
Passive voice

237
[the students]

238
Repetitive word: *learning*

239
Wordiness

240
[~~matter will~~ → matter will]

241
Passive voice

242
Repetitive word: *given*

243
Unusual word pair

244
Repetitive word: *subject*

245
Overused word: *important*

246

247 Passive voice
Repetitive word: *vocational*

248
Repetitive word: *vocational*

249
Repetitive word: *vocational*

250
Overused word: *interesting*

251
[~~In relation to~~ → About]

252
Repetitive word: *question*

253
[~~The~~ → What the]

254
Unusual word pair

255
[~~in the answer to~~ → in answer to]

256
[is ~~in~~]

257
Repetitive word: *answer*

258
Overused word: *special*