The Implementation of Single Picture to Teach Describing Things Orally at Vocational High School to Increase Speaking Ability

Muchammad Nuril Huda¹, Oikurema Purwati²
Islamic State Institution of Kediri, Jombang, Indonesia¹, State University of Surabaya, Surabaya, Indonesia²
nurilh07@gmail.com¹, oikuremapurwati@unesa.ac.id²

ABSTRACT
Vocational High School could not fulfil completely the requirements of skilled workers to support Indonesia globally. So, this study is to describe the implementation of a single picture to teach describing things orally at vocational high school to increase speaking ability. This study used classroom action research which has planning, acting, observing and reflecting step. The data was collected using speaking performance tests for the quantitative and observation checklist, field notes, and questionnaires for the qualitative. In the first cycle, all students could not describe things well because they did not get treatment. In the second cycle, 23% of students were excellent, 60% were good, and only 12% were categorized poorly. It can be implied that a single picture could assist the students’ creativity in describing things orally and increase the speaking ability.

KEYWORDS
Single picture; Teach describing things; Students speaking ability

KATA KUNCI
Gambar tunggal
Kata kunci; Pengajaran diskriptif lisan; Kemampuan berbicara siswa
INTRODUCTION
Vocational high school graduates experience many difficulties in a working environment, especially in speaking English in public. Vocational High School (SMK) is different from other schools. Wahyuni (2021) stated that a highly skilled education is required for the qualifications of graduates who are ready to compete and take up jobs in a working environment. In addition, Kertajaya (2021) believes that Germany has a better Vocational education than other educations. It means that Indonesia has the same chance to provide competent workers as vocational students. The vocational students should communicate well, such as when explaining their products. They also have a high probability of offering products to foreigners, so they have to own active English skills.

Speaking is a skill for EFL (English Foreign Learning) students. However, Novianda (2017) stated that the speaking activity required for oral communication is designed to activate spoken communication, students are expected to actually do things with language and it should be the main focus of such sessions. Furthermore, Warnidah (2015) stated that speaking is very important because by mastering the speaking skill, people can carry out conversations with others, give ideas and exchange information with others. In fact, vocational students should be able to speak English well because speaking is for interacting with other people. Since English is a foreign language in Indonesia, it is a challenge for vocational students to master it. They should have speaking skill with the teachers’ support in the learning process. Idayani and Sailun (2017), stated that speaking skill is an important part of the curriculum in language teaching, which makes it important for students to be able to speak English. Indonesia is ready to face the era of global competition with the human resources support from vocational school graduates. Therefore, according to Oikurema (2021), the teacher can use several approaches that allow students to speak to fulfill this learning objective.

A teacher must choose the best media to teach speaking skills. Munthe and Syukriah (2013) believe a good teacher is a teacher who is able to create a fun learning environment, be a motivational speaker, and have passion. Therefore, Al Arif (2020) stated that in the teaching and learning process media are defined as all the objects that mediate the learning process. The best media are media that must be interesting and appropriate for students to achieve learning objectives. Teachers don't have to pick up expensive, up-to-date, or fancy media. Tafonao, Setinawati, and Tri (2019) stated that teachers should understand the power of the media as a source of learning. The benefit of learning by using media is determining the quality of learning delivered by a teacher. Therefore, teachers need to prepare learning media before teaching speaking in class.

The appropriate media to improve students' speaking skills is a single picture. Many studies using images to teach English have been conducted. Moreover, Oktaviani and Mandasari (2020) believe using media in teaching can improve students’ motivation in learning English. In addition, according to Nurdini (2018), a single picture is a good way to create an interesting learning process, so the students can understand the material explained easier since it will make students create ideas. According to Weinstein (2018), in the cognitive psychology field, learning requires visual assistance to facilitate learning. The human brain creates ideas from the images they see. If someone sees an orange, then the image of the orange is a circle, orange-colored, like a small ball, etc. Then the physical picture can be made by the brain well. Then one can say that an orange is something shaped like a circle, an orange is like a small ball, etc.
This study departs from the assumption that a single picture is still very potential to be used in a speaking class of vocational students. Therefore, this research has two objectives. This study aims to describe the implementation of the use of a single picture to describe things orally for vocational students and to describe the response of vocational students to the use of a single picture in describing things orally.

Simamora, Agus, and Askurni (2021) stated that the implementation of describing picture strategy was a successful media to improve students’ speaking skills. In describing the picture strategy, the students gave their opinions and ideas to describe the picture based on the topic. In addition, Choiriyah (2021) stated that the sequence of images used in this study can help the speaking class issues and enhance the speaking teaching and learning process. Furthermore, Hildaini and Sugirin (2018) stated that the picture series learning model can improve student learning activities. Both the learning activities and learning outcomes increased well. Moreover, this learning model can increase student motivation and enthusiasm for learning English. Then, Nurdini (2018) stated that helping kids build the fundamental social skills they will need in their lives. Using diverse speaking exercises, such as using visuals, can also make studying more engaging and enjoyable for them.

In this study, the author used a single picture to describe things orally. The media helped students to create ideas from what they have seen. Therefore, they could describe things fluently. In addition, students could explain something in detail and clearly. More ideas will bring up more descriptive sentences. If they need some references, they can look at the single image they bring in other to encourage the ideas.

**METHOD**

In this research, the author focused on improving speaking ability by using a single picture to describe things orally at vocational high school. Craswel (2014) stated that the research contains an action agenda for reform that may change lives of the participants, the institutions in which individuals work or live, and the researcher’s life. Therefore, this study's design was classroom action research (CAR). Cameron cited in Suaida (2019) stated that classroom action research is a type of study that is reflective of the actions taken by those who carried them out, expanding their awareness of the actions made to improve the environment in which the practices of the learning are done cooperatively. Planning, taking action, monitoring the results, and reflecting are the four processes in this design for conducting classroom action research.

The planning was conducted after the author and teacher had found the problem in the preliminary study. In this step, the authors and the teacher prepared the lesson plan, materials, and media for the teaching and learning process. Rusmawan (2019) stated that the teacher should prepare the entire requirement of teaching and learning equipment such as attendance list, syllabus, lesson plan, media, and evaluation form. For action and observation step, the author and teacher implemented a single picture to describe things orally based on the lesson plan. The author performed the deed as the English instructor, while the English teacher served as the observer. In their analysis, the authors compared their planning with the information gleaned from their observations and actions. The results of the questionnaire demonstrate the effectiveness of the teaching-learning process of a verbal description of objects using a single image.

The author of this study used observation checklists and field notes to note the class
condition and speaking scoring criteria from Brown's speaking rubric to know the students’ speaking ability. Then, the author used a questionnaire to learn what the students thought and to know the students’ responses to the implementation of the single picture to describe things orally. The observation checklist contained details regarding the use of a single picture to describe things orally at vocational high school. The observer noted what the author had seen, heard, and felt in the field notes.

| CRITERIA                          | EXCELLENT | MEDIUM | POOR |
|----------------------------------|-----------|--------|------|
| CONTENT (IDEAS, COHERENCE, GOAL) | 21-25     | 12-20  | 0-11 |
| DELIVERY (PERFORMANCE, GESTURE, POWER, INTONATION) | 21-25     | 12-20  | 0-11 |
| ORGANIZATION (ORIGINALITY, METHOD) | 21-25     | 12-20  | 0-11 |
| LANGUAGE (PRONUNCIATION, GRAMMAR, CLEARANCE) | 21-25     | 12-20  | 0-11 |

In addition, students’ speaking score data analysis was done to know whether there were changes or not after the action. The data analysis was reported in the form of a description presenting the situation in the class activities. In this study, the author used both qualitative data and qualitative data. The qualitative data was obtained by observation while the qualitative data was obtained by the result of the questionnaire. In the analyzing data, the result of observation was interpreted and compared with a lesson plan and the questionnaire.

FINDING AND DISCUSSION

Findings

First Cycle

The author described the field note, observation, and students speaking scores for the first cycle. It provided the classroom activities description with a single picture to describe things orally. The author elaborated the observation findings in the form of classroom activities description. The classroom activities were divided into three parts. They are pre-activity or the activities done before the main activities in the teaching and learning process, whilst-activity or the main activities, and post-activity or concluding the teaching and learning process.

In the preliminary activity, in SMK N 1 Mojoagung, the teacher started by saying hello to the students then the students responded to the greeting. The teacher checked the condition to make the situation full of care. The teacher asked some of the students about what they had done the previous day. At that time, the students felt comfortable with the teacher and told their activities confidently. The teacher checked the attendance list then there were 40 students. They were 14 boys and 26 girls on the list, then at that time, one boy and one girl were absent.

In whilst activities, there were literacy, critical thinking, communication, collaboration, and creativity. The teacher asked the students to mention the things around them as much as possible. The students were very interested, so they said many things then a student could mention more than three things around them. Then, the teacher gave them an elicitation about
describing orally. He connected the things that they had said with the material that day. After that, the teacher gave many vocabularies such as adjectives, nouns, and verbs. The teacher drilled them, so they could say the diction correctly. Finally, the teacher explained how to describe things orally. In the explanation, the teacher also gave an example of how to describe things orally. He told me a pencil case, taken from the first line desk. He described the color, shape, and price of the pencil case while the students were listening to the explanation.

In post activities, for the creative activity, the teacher asked the students to speak up and explain everything around them. At that time, the students could not produce many sentences to describe things orally. But then, it was good because it was still the first time, they knew this material. In the last ten minutes, the teacher asked the students whether they understood or not. He gave reinforcement to students because they had been good students. Finally, the teacher finished the class by greeting the students.

The students’ speaking score was taken through their performance in describing things around them. The students could describe things by giving one sentence even if they could not speak up anyway. This condition showed the students’ difficulties in describing things orally. They did not have more ideas to speak because they could not see the things’ characteristics in detail. The average student’s speaking score was 65 and classified as a poor score.

**Second Cycle**

The author described the field note and observation for the second meeting. The author also described the questionnaires to know the response of the students toward the implementation of the single picture to describe things orally at vocational high school to increase their speaking ability.

**a. Classroom activities**

Sixteen teacher checklist activities were allotted into preliminary, whilst, and post-activity. Then, there were only eight checklist activities for the students. They supported the field notes to describe the condition in the second cycle of this classroom action research.

In preliminary activities, the activities were the same as the activities of the first cycle. But then, the teacher gave a new treatment in the class for whilst activities. He brought three kinds of pictures. They were a laptop, cell phone, and printer. He divided it among the students randomly and asked them to describe it orally in class. They should tell a single picture as well as possible.

The teacher called the students one by one based on the attendance list. While the students were describing orally, the teacher was taking their scores on speaking performance. One student took about one minute to explain things orally. Then, they could say around six sentences in their oral description. They used to see the picture to get some ideas. It happened many times to different students. They saw the image and then said something. They saw it again and then said something again. The single picture could help them speak up because it provided some ideas.

The performances needed for about 40 minutes. After that, the teacher fed back on their performances. The students listened to the teacher carefully then they could understand more about how to describe things orally, especially by using a single picture.

**b. Students’ response**
The author gave questionnaires to the students to know their responses of using single picture to describe things orally. The author made ten questions and then divided them in some parts of the observation. There were only thirty-eight students because two of them were absent for two meetings. The students answered the questionnaire based on what they felt and thought.

Table 2: The students’ responses to the questionnaires

| No | Questions                                                                 | Setuju | Tidak |
|----|---------------------------------------------------------------------------|--------|-------|
| 1. | Apakah belajar B. Inggris penting untuk anda?                             | 38     | -     |
| 2. | Apakah berkemampuan berbicara B. Inggris adalah kebutuhan?                | 33     | 5     |
| 3. | Apakah pelajaran describing itu penting dalam B. Inggris?                 | 35     | 3     |
| 4. | Apakah pelajaran describing itu mudah?                                   | 35     | 3     |
| 5. | Apakah pemakaian media pembelajaran sangat diperlukan dalam pembelajaran berbicara B. Inggris? | 38     | -     |
| 6. | Apakah media single picture membantu memperkaya ide dan kosa kata dalam mendiskripsikan secara lesan di B. Inggris? | 38     | -     |
| 7. | Apakah pemakaian media single picture sangat memambantu untuk mendiskripsikan secara lesan? | 36     | 2     |
| 8. | Apakah pemakaian media sangat cocok untuk peangajaran berbicara di B. Inggris? | 38     | -     |
| 9. | Apakah media single picture merupakan media yang sederhana, namun memberi dampak positif yang besar dalam pelajaran mendiskripsikan secara lesan? | 38     | -     |
| 10. | Apakah pemakaian media single picture membuat mengerti cara untuk mendiskripsikan secara lesan? | 38     | -     |

Table 3: Students’ speaking score chart

**STUDENTS' SCORE**

- **POOR:** < 70
- **MEDIUM:** 70 - 79
- **EXCELLENT:** 80 - 100
- **ABSENT:**

The teacher asked the students to describe orally the thing inside the single picture. Then, he took the score from the performances. The teacher took the score based on four components Brown speaking rubric.
Based on the students’ score table above, with a poor score, the students could not produce many sentences. They told not more than four sentences. They did not say the vocabulary correctly and make a complete sentence. Their sentences were also not good in grammatical. With a medium score, the students could produce more sentences than the poor score students did. They could produce more than five-sentence and the sentences were good enough grammatical. With an excellent score, the students could produce many sentences. The sentences were good in grammatical, organization, and vocabulary. Lestari and Sholichah (2022) stated that speaking ability is a linguistic aptitude or a mode of communication in which a person can communicate his or her thoughts or information in a logical order while mastering the mechanics of speaking convention (pronunciation, grammar, vocabulary, fluency, and understanding).

**Discussions**

**a. The implementation of single picture to describe things orally**

In SMKN 1 Mojoagung, the students could speak more after the teacher had given a single picture. Choiriyah (2021) stated picture is a medium to improve the students’ speaking ability because they will help them create ideas to deliver. A single picture is a suitable medium to describe things orally.

Single picture media is helpful for vocational school students to describe something or a product. The picture completes the information, so the people can get all information about the situation or something they want to know. In addition, Yolanda (2021) believes that pictures can help students imagine the abstract to be concrete. Therefore, pictures help the students visualize language from abstract to concrete. Karsono (2014) in relation to visual media, generally, young learners cannot handle abstract concept, but they can grasp concrete concepts easily. Simamora, Agus, and Askurni (2021) believe that pictures can help students to think more about the situation. In addition, according to Nurdini (2018) single picture is one of the good ways to create an interesting learning process, so the students can easier to understand the material explained since it will make students create ideas. According to Weinstein (2018), in the cognitive psychology field, learning requires visual assistance to facilitate learning.

The teacher did activities related to the lesson plans based on the field notes. The observation checklist supported the field notes to describe the implementation of a single picture to describe orally. We could know class activities in detail from the observation. So, it explained all activities of the students and the teacher. In the second observation, we could know the students’ oral descriptions. The teacher asked them to describe things orally using a single picture given. The single picture consisted of a printer, laptop, and cell phone. The teacher used that image because those three things were close in life.

The teacher took a score of the students’ performance. Based on the students’ performances, five students got poor score. They could only describe orally a single picture in around four sentences. Their pronunciation was not good then they produced a lack of content oral description. They could not deliver their speech fluently. They made some mistakes in
grammatical then they did not have a good organization of their content.

On the other hand, nine students got an excellent score and described things very well. Their content, delivery, organization, and language were good. They explained things in many sentences with good grammatical, intonation, and movements. Then, their organization was good. Finally, the other 24 students got a medium score. They did the duty in the medium level of content, delivery, organization, and language.

Here are some examples of the transcripts of the students’ oral performances:

- **Poor score:**
  - Abdul Rohman “the colour is black. The laptop is ON. The name is lekud. The brand is acer”
  - Maria Natalia “it is colour is black. The brand is canon. The price is five hundred thousand rupiahs”
  - Saifudin Zuhri “it is cell phone. It is big, the brand is nokia. The function is to call. It has memory, batery, sim card.

- **Medium score:**
  - Heri Lutfi ansyah “Hi guys, what is it?. It is cell hand phone. Cell hand phone is has memory, sim card, battery. The fuctional cell hand phone, we can cal family, brother, girlfriend, and cell hand phone its ecolour is white, it brand is nokia, thank you.”
  - Sania “It is printer. The colour is black. The brand is canon. It is heavy. The price is Five hundred thousand rupiahs. It is big”
  - Khalimatus Sakdiyah “ Hi guys, it is laptop. I can play game in the laptop. I can listen to the music. The brand is acer. The laptop is ON”

- **Excellent score:**
  - Jevy Sartika “It is cell phone. It is big. The brand is nokia. The colour is white. It has battery, memmory card, sim card. The function is to call. The band is white. We can listen music. We can take picture.”
  - Nika Sari “It is a laptop. The colour is black. The laptop is ON. The shape is recangel. It has a battery. It has many buttons.”
  - Nisfatul Kholifah “It is cell phone. It is big. The brand is Nokia. The colour is white. The funtinal is to send massages, to call. It has memory card, a battery, SIM card. We can listen music. We can take picture.”

Single picture is very usefull to help the students to get more ideas in describing things orally. Based on the theories of Shulvitz, Simamora and Choiriyah, supported by the result of field notes and observation checklist, it could be concluded that the implementation of single picture is good to be implemented in describing things orally. It is easy to do, so English teacher can implement it.

**b. The students’ response toward the implementation of single picture to describe things orally**

Vocational school students like single picture media very much. The author found that most students like a single picture to describe things orally based on the questionnaires. They agreed that a single picture could help them get ideas and be a suitable medium for telling things orally.

Based on the questionnaires and the field notes, they explained that the students respond
to a single picture to describe things orally well. They felt happy and comfortable using it to tell.

Based on the field notes, observation, questionnaires, and support from the experts, the implementation of a single picture for oral description did not have any disadvantages. On the other hand, it gives many advantages for the teacher to teach speaking description material. Then, the students can understand well how to describe things orally.

There were ten questions that were presented. Here are the additional classifications,

a. Questions 1-2 deal with the importance of English and speaking ability.

b. Questions 3-4 deal with the describing orally material.

c. Questions 5-7 deal with the media for teaching English especially in describing orally.

d. Questions 8-10 deal with the single picture is suitable media to describe orally.

Based on the questionnaires, the students' response was good toward a single picture to describe orally. Most of the students agreed with the question. They agreed perfectly on questions number 1, 5, 6, 8, 9, and 10. That showed that they responded well to this implementation. They respond well that the single picture is suitable media for describing orally. It could be seen from their answer in numbers 8, 9, and 10. Their answers perfectly agreed with the questions.

The field notes also supported that the student responded well to a single picture to describe orally. In the first cycle, the teacher asked the students to say about a pencil case then they did it well. In the second meeting, they describe things in a single picture confidently. It showed that they were ready to speak up. So, their response is well to this implementation. They were very active and enthusiastic.

All students had the same response about the advantages of a single picture to describe orally. They agreed single picture can help them be creative and active in describing. They responded that the single picture media was simple and suitable. It is useful to describe things orally. The simple media made them understand the material easily.

All students agreed that English is important as it is an international language. They have to master English, especially speaking skills. They need this skill for working or presenting. Therefore, the teacher should use media in speaking because it is challenging to make the students talk actively. All of the students agreed that teachers should use a medium in teaching English. So, the students responded well to a single picture in describing orally.

Based on the questionnaires and the field notes, we could know that the students respond well to a single picture to describe things orally. In line with the questionnaire and field notes, the students’ score result showed that the students improved their speaking ability on the second cycle. Based on the previous chapter's explanation, we could know that a single picture gave a positive effect to describe things orally. It supported the students to describe things fluently. Therefore, they could be active and enthusiastic in describing things orally. Finally, they felt happy and comfortable in describing things orally by using a single picture.

**CONCLUSION**

This study intended to describe the implementation to teach describing things orally and to know the students’ response toward the single picture used. In conclusion, the implementation of a single picture is well in teaching describing things orally at vocational high school. So, English teachers should implement a single picture to teach describing things orally. A single picture is useable to help the students get more ideas and make them more active and
enthusiastic in describing things orally. In addition, the students responded well and active in the learning process. They used the single picture to speak fluently in describing things. Furthermore, this media could increase the students’ speaking ability. On the second cycle, 23% of students were excellent, 60% were good, and only 12% were categorized poorly. It means that almost 90% could pass the minimum score.

In this study, a single picture for oral description in vocational high school was implemented well in SMK N 1 Mojoagung. The students could describe the things fluently and produce many sentences to speak up their ideas. The single picture helped them get more ideas from the image and characters. The students could get the ideas from the physical appearance, the function and the characteristics of the things. The students could increase their speaking ability, known from the speaking score. Therefore, the author expects the following study uses the single picture in other English skills.

REFERENCES

Al Arif, T. Z. Z. (2020). The Influences of Audio Visual Media and Vocabulary Mastery towards English Learning Achievement of EFL Students. J-SHMIC : Journal of English for Academic, 7(1), 57-65. https://doi.org/10.25299/jshmic.2020.vol7(1).3905.

Ana Sri Lestari, & Sholichah, N. I. (2022). Improving Speaking Ability by Using Picture Series. Jurnal Penelitian Ilmiah INTAJ, 6(1), 22–41. https://doi.org/10.35897/intaj.v6i1.728.

Choiriyah, R. (2021). Implementing Picture Series to Improve Speaking Skill. IAI Darussalam Blokagung Banyuwangi Journal of English language and Pedagogy Vol.1, No.1.

Cresswell, John W. (2014). Concise Introduction of Mixed Methods Research. Los Angeles: Sage Publication.

Hildaini, N., Sugirin. (2018). Improving English foreign language learners’ speaking skill using picture series and story-telling techniques. UNNES International Conference on English Language Teaching, Literature, and Translation (ELTLT 2018). Advances in Social Science, Education and Humanities Research (ASSEHR), volume 188.

Idayani, A., & Sailun, B. (2017). Roles of Integrating Information Communication Technology (ICT) in Teaching Speaking at the First Semester of English Students of FKIP UIR. J-SHMIC : Journal of English for Academic, 4(2), 12-23. https://doi.org/10.25299/jshmic.2017.vol4(2).603.

Karsono, P. (2014). Using Pictures in Improving The Speaking Ability of The Grade Eight Students of SMP Negeri 1 Anggana. Dinamika Ilmu. Vol. 14, No. 2. December, 2014.

Kertajaya, H. (2019). Model Creativepreneur at Vocational High School Art and Creative Industries Sector for Creative Industry Development. Conference: 2019 IEEE Eurasia Conference on IOT, Communication and Engineering (ECICE).
Munthe, P., Syukriah. 2013. Picture as Media to Teach Speaking Descriptive Text to the Seventh Graders. Jurnal Mahasiswa Unesa. Surabaya.

Novianda, R. (2017). Teaching Speaking by Using Picture Strip Stories. English Education Journal (EEJ), 8(3), 386-403, July 2017.

Nurdini, R. (2018). The use of picture to improve students’ English speaking skill. English Teaching Journal: IJET Journal. Vol. 7, Issue. 2.

Oikurema, P. (2021). The Implementation of Task-Based Language Teaching to Teach Speaking Descriptive to the First Graders of Junior High School. Surabaya: E-Journal UNESA Vol.1, No.1.

Oktaviani, L. Mandasari, B. (2020). Powtoon: A Digital Medium to Optimize Students’ Cultural Presentation in ELT Classroom. Teknosastik: Jurnal Bahasa dan Sastra, 18(1), 33-41.

Rusmawan, P. 2019. A Study on Teaching Speaking Skill of Descriptive Text in Vocational High School. Published by Faculty of Culture, Management, and Business. Universitas Pendidikan Mandalika. p-ISSN: 2355-0309 | e-ISSN : 2548-5865.

Simamora, Y., Agus, S., Askurny, N. (2021). The Implementation of Describing Picture Strategy in Improving Students’ Speaking Skill. Students Online Journal: Vol.2 No.1.

Suaida, M. (2019). The implementation of favorite picture media for increasing speaking skill in descriptive text. English Teaching Journal: A journal of English Literature, Linguistics, and Education Vol.7, No.1, June 2019, pp. 38-45.

Tafonao, T., Setinawati, Tari. E. (2019). The Role of Teachers in Utilizing Media as a Learning Source for Milenial Students. Conference: Proceedings of the 1st Asian Conference on Humanities, Industry, and Technology for Society, ACHITS 2019, July 2019. Surabaya: Indonesia.

Wahyuni, DS and Sugihartini, N. (2021). The Core Competencies of Vocational High School Teachers in 21st Century Learning. Proceeding: 2nd International Conference on Teaching Education Science (ICETES 2020). Vol. 540.

Warnidah, N. 2015. IMPLEMENTATION DEBATING TECHNIQUE IN TEACHING SPEAKING (Descriptive Study of Student At Twelve Level of SMAN1 Curup). Journal of Linguistics and Language Teaching. Vol.2 No 2; October 2015.

Weinstein, Y., Madan, C., Sumerachi, M. 2018. Teaching the science of learning. National Library of Medicine. doi: 10.1186/s41235-017-0087-y. 2018, January.