

INSTAGRAM AND STUDENTS' HIGHER ORDER THINKING SKILL OF ANALYZING

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Submit, 25-11-2019 Accepted, 21-12-2019 Publish, 22-12-2019

ABSTRACT

This study aims to figure out how students implement their analyzing skill as seen from their activity in examining their peers' narrative compositions posted in instagram. The researcher collected the data in the form of written expressions (sentences) by observing students' analyzing skill processes when they examined their peers' narrative compositions through comment feature in their peers' captions. The findings showed that the activities of examining peers' narrative compositions posted in instagram was belong to the real and meaningful transfer learning of near transfer. Next, two students (middle and high achievers) could fulfill five out of eleven criteria of critical thinking skill. Furthermore, both students solved problems in their own compositions better than in their peers' compositions. Unfortunately, the low achiever did not give any feedback comments to her peers' compositions. Thus, she had not applied her analyzing skill yet. In short, the actual evidence of analyzing skill implementation when students analyze their peers' narrative compositions posted in instagram is possible to justify.

Keywords: examine, HOT skills, social media.

INTRODUCTION

Information and communication technology (ICT) plays important role for 21st century learning. Thus, it is crucial for both students and teachers to master the ICT skill. It is essential for students since the 21st century learning skills include collaboration skills, communication skills, information literacy, media literacy, and ICT literacy (Kay, 2010). Moreover, the skill in ICT literacy is beneficial for students in which the use of ICT gives chances for students to work collaboratively and independently. It is not only improving the students' learning

experiences, but also assisting them to advance their skills importantly to participate effectively in a group work and advance team spirit, cohesion, as well as social values (Pheeraphan, 2013). Meanwhile, it is also essential for teachers to be technology-savvy educators and catch up with the advance of technology nowadays. Since most of millennial students today are digital learners, teachers need to figure out students' interests that relate to technology which can be implemented in teaching and learning so that the lessons can be delivered interestingly and effectively (Edi, 2015). Therefore, the use of ICT will work as tool to realize that digital learning.

Furthermore, social networking sites (SNSs) or familiarly known as social media, as part of ICT tools, are used by most people to communicate in their social life nowadays. One of social media that famously used is instagram. Instagram is a social networking platform for photos and videos sharing that can be shared to other platforms like facebook and twitter (Kontula, 2018; Stec, 2018). Regarding to ICT skill, instagram can be used as alternative online teaching and learning. Most students especially teenagers and young adults today actively use instagram for their social life interaction. Therefore, it will be interesting when teachers use this students' interest to make them more engage in teaching and learning activities given. Besides, this application can be installed in students' smartphones so they can use it anytime they want.

In terms of English learning especially writing, instagram offers many interesting writing activities for students that may activate their higher order thinking skills (HOTS). Previous studies on the use of instagram in teaching writing indicate that HOT skills were actually applied by the students. Specifically, the activities in these previous studies indicate that students have used their HOT skill of analyzing. First, Handayani (2017) used photo in her account as a source for discussion session in which the students showed their opinion by describing what they saw in the photo. Next, Khasanah (2018), Rinda, Novawan, & Miqawati (2018), and Ustoyo (2018) asked students who participated in the studies to give peer feedback comments through comment feature in their friends' compositions that were uploaded as *caption*. Here, they gave comments by correcting mistakes they found in their friends' composition, for example punctuation, structure, and choice of words, etc.

From all previous studies on the use of instagram in teaching writing mentioned previously, only one study conducted by Ustoyo (2018) concerned about the application of HOT skill of analyzing and other HOT skills' elements in writing activities through instagram. Other studies on the other hand, overlooked the HOT skills' elements that actually exist and can be described in the analyzing process of students' composition by the use of instagram. Moreover, it is prominent to study the actual evidence from instagram activities when students

analyze their friends' composition. In this way the application of HOT skills can be investigated and justified by the use of Instagram. This study therefore, tries to investigate deeper on how students apply their HOT skill of analyzing through their friends' compositions posted in Instagram.

LITERATURE REVIEW

Higher Order Thinking Skills

There are some point of views stated by experts regarding to the description of higher order thinking skills. The literature review in this study specifically use point of views from Anderson and associates and Brookhart to describe in details HOT skills found in the process of students' skill in analyzing their peers' compositions posted in Instagram.

Anderson et al.'s taxonomy (the revise version of Bloom's taxonomy)

Anderson et al. (2001) mention two basic dimensions of students' learning process in their revision of Bloom's taxonomy. The first dimension is knowledge domain that comprises four types of knowledge notably factual, conceptual, procedural, and metacognitive knowledge. The second dimension refers to the cognitive process domain that involves six types of thinking: remembering, understanding, applying, analyzing, evaluating, and creating. These six types of thinking are claimed by many people as thinking skills. However, Saifer (2018) in his taxonomy of thinking skills (TOTS) states that Anderson and associates (in their revision of Bloom's taxonomy) did not refer the knowledge levels in their taxonomy as thinking skills. Yet, some levels (analyzing, evaluating, and creating) are also stated in HOT skills elements in Saifer's taxonomy of thinking skills (TOTS) in which analyzing and evaluating are included in HOT skill of critical thinking and creating is included in HOT skill of creative thinking. Thus, it can be concluded that both Anderson and associates and Saifer share the same values of thinking skills in students' learning process.

As mentioned previously, the last three types (analyzing, evaluating, and creating) in Anderson and associates' types of thinking are classified by others as HOT skills. To add, they are also mentioned as parts of Saifer's HOTs. Analyzing involves parsing materials into element parts, and finding out how each part relate to one another and to a general structure or purpose. The activities include differentiating, organizing, and attributing. Next, evaluating involves making judgement based on the criteria and standards. The activities include checking and critiquing. Last, creating involves putting or restructuring elements together to form or produce a new and original pattern, structure, or product. The activities include generating, planning, and producing.

Brookhart's higher order thinking skills

Regarding to Anderson et al.'s higher order thinking skills mentioned previously, it is not enough to state for instant, when students examining their peers' composition through comment feature in their peers' instagram account they have applied their analyzing skill. It is salient to figure out deeper other elements of HOT skills that appear when students analyze their peers' composition. This, henceforth, can be done by describing other elements of HOT skills which include transferable, critical thinking, and problem solving skills.

Furthermore, Brookhart (2010) defines higher order thinking skills as transferable, critical thinking, and problem solving skills. Transfer is defined as 'meaningful learning' in which students are able to associate their learning to other things ahead of those they were taught to connect with it. Furthermore, Haskell (2000) in his book "Transfer of Learning" mentions six levels of transfer. The first level is nonspecific transfer. It is a skill that relates to past learning that people naturally get or we can say this as everyday experience of transfer. The second level is application transfer. It refers to the ability of someone in applying what he/she has learned to a specific situation. The third level is context transfer. It refers to someone's ability to apply what he/she has learned in a quite different situation. The fourth level is near transfer. It is the ability to transfer previous knowledge to a new situation that is parallel to previous situation. The next level is far transfer. It refers to someone's ability to apply what he/she has learned to a very distinct situation which often involves in invention or product development. Finally, the last level is displacement or creative transfer. It refers to transferring learning that leads to the creation of new concept based on the discovery or similarities between the old and new knowledge/ learning. Level 4, 5, and 6 are the real transfer learning since they oblige the learning of something new in order to make meaningful transfer.

Next, critical thinking skill is defined as the ability to apply wise judgement or produce a reasonable critique. In addition, it is also defined as the ability to reason, reflect, and make sound decisions. There are eleven elements of critical thinking mentioned by Paul & Elder (2013) which involve clarity (the ideas must be clear and easy to comprehend), precisions (precisely shows the ideas to the necessary level of detail), specificity (the ideas must be clear and have fix content as well as organization), accuracy (use correct grammar, spelling, punctuation, etc), relevance (the ideas match with the topic discussed), consistency (being consistent following the rules of the task given, e.g. organization, grammar used etc), logic (the ideas are reasonably make sense and match with the topic or task given), depth completeness (the ideas contain complexities and multiple interrelationship), significance (focusing on the crucial parts that are related to the topic, not proxy), breadth (the ideas must consider the

possibility of multiple point of views, perspectives, or solutions), and adequacy (the ideas are good enough and eligible).

Last, problem solving skill is defined as the ability of learners to solve problems in their academic work and life as well as solving problems that are made for them and solving new problems that they face themselves, creating new solution. Moreover, Bransford & Stein (1993) state criteria that learners must master in order to be called as an ideal problem solver. The criteria include identify the problem (students must be able show the main problem they face and describe clearly the nature of the problem), define and represent the problem (students must analyze the problem thoroughly and identify the referred key elements), explore possible strategies (students must be able to explore many kind of strategies to solve the problem), act on the strategies (students must actively implement the strategies to solve the problem), and look back and evaluate the effects of the activities (describe the outcomes and reflect the success of actions done to solve the problem).

Instagram

As previously mentioned, instagram is defined as an application that is used to share photos and videos and allows those photos and videos to be shared in other applications like facebook and twitter (Kontula, 2018; Stec, 2018). As an online learning tool, features in instagram are possibly be used in ESL/ EFL teaching and learning. Specifically, the features can be used to teach various kinds of writing activities that may activate students' HOT skills.

Instagram features

Instagram has many features that are continuously upgraded. However there are basic features that are commonly used by users for their social media activities. The first feature is instagram profile interface. It shows information about users' profiles. Secondly, there is profile content that enables users to scroll down the file. Users can see all profile photos and videos of their own and other users appear together. Third, there are instagram's photo and video content. Here, users are able to like the photo or video, leave a comment, or read previously posted comments of their own photo and video as well as other users' photo and video. Next, there is instagram story feature which allows users to post a selection of photos/videos into one story that will dissapear after 24 hours. Last, there is navigational tools that consist of five icons which are put at the bottom of each page and function as the basic navigational tools for instagram activities (Handayani, 2016).

Instagram as a tool in ESL/EFL learning

As a learning tool, Instagram provides a lot of visual data that work as an aid for language learning (Al-Ali, 2014). In addition, the use of Instagram in teaching and learning activities can assist in creating a socially connected community of learners, because the tool itself gives space for students to communicate and socialize with each other ahead of classroom setting. Furthermore, Wiktor (2012) states that Instagram has some essential tools that are advantageous for educational purposes related to linguistic intelligence. For example, when teachers upload pictures and share them with their students and ask them to analyze or give feedback, the activity will push the students to use their language skills. In terms of English learning, specifically the writing skill, Instagram could possibly be used for students to apply their higher order thinking skills. Moreover, the use of this social networking site will expand students' writing practices exploration to new writing genres that were unimaginable a decade ago (Elola & Oskoz, 2017).

Various kinds of HOT skills writing activities by the use of Instagram

In terms of English learning specifically writing skill, Instagram, as a learning tool, offers many interesting writing activities for students to practice. First, teachers can post an interesting photo and ask students to compose a descriptive in the comments. This activity is called *Caption It!*. It can be used to practice students' skill of creating since students use the photo to generate ideas for them to compose or produce a descriptive text. Second, an activity called *photo inspiration* can be used for practicing students' skill of evaluating. Here, students are assigned to give comments to show their critics and judgement on photo, video, or a writing product shared by the teacher (Handayani, 2016).

Next, teachers can use Instagram to film themselves as an alternative way in explaining the topic of the lesson that the students will learn. Students watch and listen the video and then compose a summary about the most important facts or characteristics of the topic presented. This activity can be used to practice students' skill of analyzing since they have to classify the less to the most important facts or characteristics that they will use as sources to compose the summary. Last, students can use *other accounts* to assist them to compose an essay or make a presentation. This activity can be used to practice students' skill of creating since students use the accounts to assist them to develop ideas for their composition as well as to make a presentation (Savini, 2017).

RESEARCH METHOD

It is a qualitative study that focuses on the case study design. The researcher did an electronic observation by relying on historical records of online

communication in which students gave feedback comments to their peers' narrative compositions posted in instagram through comment feature in their peers' caption. Furthermore, the researcher only selected one out of eight groups in the classroom that consisted of three female students of tenth grade as participants for this study. The chosen participants were students from one of vocational high schools in Sidoarjo. They were also classified by their English proficiency that comprised into one high achiever, one middle achiever, and one low achiever.

The data of this study were in the form of written expressions (sentences) found and used by the students in their feedback comments posted in instagram. The researcher collected the data by observing students' analyzing skill processes as seen in their feedback comments posted in instagram. The data then were analyzed using the elements of each Brookharts' HOT skills of transfer, critical thinking and problem solving. In addition, students interview through direct interview (offline) and direct message (online) was also done to strengthen the data analysis.

FINDING

This part discusses the findings of HOT skills' elements in terms of transfer, critical thinking, and problem solving applied by students in analyzing their peers' narrative text compositions posted in instagram. There were two narrative compositions the students had to compose. The first task was they had to compose the story of 'Malin Kundang' with alternative ending, while the second task they had to choose one famous narrative text and re-compose the text with alternative middle and ending parts. The students then had to analyze the compositions from the two tasks made by their friends in the same group by examining their generic structure, language feature, word choice, paragraph spacing, capitalization, and punctuation through comment feature in their peers' captions.

Transfer Skill

The finding of transfer skill was based on the lesson objective given to students. The objective assigned the students to analyze their peers' narrative composition by examining its generic structure language feature, word choice, paragraph spacing, capitalization, and punctuation through comment feature in their peers' instagram account. Based on the transferable skill taxonomy mentioned by Haskell (2000), the analyzing activity that the students did through instagram was in the fourth level of taxonomy which is called near transfer. It is in the position of near transfer level since the students transfer their knowledge from

paper-based comment/ feedback to similar situation in online setting through comment feature in instagram

Critical Thinking Skill

As previously mentioned there were three female students that belonged to one group participated in this study. They were S10 (middle achiever), S11 (high achiever), and S12 (low achiever). The results showed that two students (S10 and S11) analyzed not only their peers' compositions in the same group but also other groups. S10 analyzed four compositions while S11 analyzed five compositions. To add, S10 analyzed compositions in both first and second task while S11 only analyzed compositions in the second task. Unfortunately, S12 did not analyzed any of their peers' compositions either in the same group or others.

Based on the critical thinking criteria stated by Paul & Elder (2013), the results showed that both S10 (middle achiever) and S11 (high achiever) could fulfill five out of eleven criteria of critical thinking skill when they analyzed their peer's narrative compositions. They could fulfill the criteria of clarity, specificity, relevance, logic, and significance. However, they failed to fulfill the criteria of precisions, accuracy, consistency, depth-completeness, breadth, and adequacy. Furthermore, since S12 (low achiever) did not examine any of her peers' compositions it can be concluded that she had not implemented her critical thinking skill of analyzing yet. Table 1 below summarized the critical thinking criteria fulfilled by the students in analyzing their peers' compositions:

Table 1 Critical Thinking Skill Criteria Checklists for Analyzing Skill Level

Participants	Criteria										
	Clarity	Precisions	Specificity	Accuracy	Relevance	Consistency	Logic	Depth Com- pletteness	Significance	Breadth	Adequacy
S10	√	X	√	X	√	X	√	X	√	X	X
S11	√	X	√	X	√	X	√	X	√	X	X
S12	X	X	X	X	X	X	X	X	X	X	X

Problem solving skill

In this part the results of students' skill in solving problem was based on the criteria of an IDEAL problem solver stated by Bransford & Stein (1993). Here, students who gave feedback comment only acted the first three components of actions as an IDEAL problem solver of identifying the problem, defining and representing the problem, and exploring possible strategies. It happened because they simply had to examine and correct or give solutions to any mistakes or problems they found in their peers' compositions. Meanwhile, students who were

given feedback must revise their compositions based on their peers' comments posted in their composition *captions*.

Furthermore, S10 (middle achiever) could identify the problems/mistakes as well as define and represent the problems/mistakes in her peers' compositions. However, she did not give any solutions or explore possible strategies to solve the problems. Meanwhile, in the position as the one who was given feedback, S10 identified and defined the problem in her first composition herself. Hence, she herself who acted out the strategy to solve the problem. Moreover, there was no solution/strategy given for her second composition's mistakes/problems. Therefore, no revision was done to the composition.

Next, S11 (higher achiever) could only identify the mistakes/problems in her peers' composition. Furthermore, in the position of someone who was given feedback, she did not revise her first composition even though her peer showed her mistake. She persisted there was no mistake in her composition. As for her second composition, she revised her composition based on her own analysis. Meanwhile, all participants did not fulfilled the last action as an IDEAL problem solver of looking back and evaluating the effect of the activity since they were not assigned to do that by their teacher.

Finally, since S12 (low achiever) did not give any feedback to her peers' composition as well as did not revise her compositions based on her peers' feedback, it can be concluded that she also did not implement her problem solving skill in analyzing. Table 2 below summarized the problem solving criteria fulfilled by the students in analyzing their peers' narrative composition posted in instagram:

Table 2 Students' Problem Solving Skill Criteria Checklists

Participants	Components				
	Identify the problem	Define and represent the problem	Explore possible strategies	Act on the strategies	Look back and evaluate the effects of the activity
S10	√	√	X	X	X
S11	√	X	X	X	X
S12	X	X	X	X	X

To add, Table 3 below summarized the problem solving criteria fulfilled by the students in analyzing their own narrative compositions posted in instagram:

Table 3 Students' Problem Solving Skill Criteria Checklist in Analyzing Their Own Compositions Posted in Instagram

Participants	Components				
	Identify the problem	Define and represent the problem	Explore possible strategies	Act on the strategies	Look back and evaluate the effects of the activity
S10	√	√	√	√	X
S11	√	√	√	√	X
S12	X	X	X	X	X

DISCUSSION

In this part the findings were described elaborately to answer the research question of this study. The discussions covered full descriptions of the extent of HOT skills the students fulfilled, specifically their skill of transferring, thinking critically, and solving problem.

Transfer Skill

As mentioned previously in finding, students' activity of analyzing their peers' narrative composition through comment feature in their peers' instagram account was in the level of near transfer, which was the fourth level in taxonomy of transfer learning stated by Haskell (2000). The activity belonged to near transfer because students transferred their previous knowledge of conventional way in giving feedback comment directly on their friends' paper work (paper-based) to the digital one by the use of instagram. It is in line with the definition of near transfer that refers to the ability in transferring previous knowledge to a new situation that is quite similar to previous situation (Haskell, 2000). Although these two media are different in form, both of them has similar function as platforms for students in giving feedback to their friends' work. Next, since the activity of giving feedback through instagram was done online, it was possible to get and give multiple feedback comments for and from other peers for the revision of the compositions. Furthermore, a real transfer learning requires the learning of something new that is meaningful. Level 4, 5, and 6 in transfer of learning taxonomy require such new learning (Haskell, 2000). Therefore, the switchover activity from paper-based feedback comment to online feedback comment by the use of instagram met the criterion of real transfer learning.

Critical Thinking Skill

The analysis of students' critical thinking skill was adapted from critical thinking criteria proposed by Paul & Elder (2013). There are eleven criteria that

must be fulfilled to become a good critical thinker. The criteria includes clarity, precisions, specificity, accuracy, relevance, consistency, logic, depth-completeness, significance, breadth, and adequacy.

Based on the the results showed previously, S10 (middle achiever) and S11 (high achiever) could fulfill the critical thinking criteria of clarity (the feedback they had given was clear and easy to understand), specificity (their examining for the compositions was clear and had exact content in which they examined the language feature that was part of the compositions that must be analyzed), relevance (the analyzing activity they did suitable with the task given), logic (the feedback comments were reasonably make sense and suitable with the task given), significance (their feedback comments straightly focused on the language feature used in the compositions which was one of some parts of the compositions they must analyze).

Yet, they failed to fulfill the criteria of precisions (they only concerned on one item to analyze which was language feature used while there were actually other items that needed to analyze as well), accuracy (both of them used ungrammatical sentences in giving feedback even though they were still be understood, and S10 was inaccurate in identifying some of the grammar mistakes in her peers' compositions), consistency (they were inconsistent in using the language when they gave feedback comments because they mixed English and Bahasa in their sentences), depth-completeness (their feedback comments was short and simple), breadth (there were no alternative solutions given), and adequacy (S10 only identified and defined the grammar mistakes in the compositions while S11 only identified the grammar mistakes. To add, both of them gave no solutions for the grammar mistakes they had identified and defined).

Next, S12 (low achiever) failed to fulfill all criteria since she did not analyze her peers' narrative composition at all. One of few parts of an interview with S10 below showed her reasons for not giving feedback comments to her peers' compositions:

R : Saya ingin bertanya, apakah kamu memberi komen akan tulisan-tulisan naratif yang teman kamu posting di instagram mereka?

S12 : Tidak

R : Apa alasannya? Apakah kamu mendapat kesulitan dalam memberikan feedback?

S12 : Saya tidak tahu mau memberi komen apa.

R : Jadi tidak ada ide sama sekali waktu itu?

S12 : Iya.

It can be concluded from the interview that S10 did not understand the order of the task given. Therefore, she preferred not to do the feedback comment.

Problem Solving Skill

The analysis of students' skill in solving problem was adapted from the criteria for an IDEAL problem solver proposed by Bransford & Stein (1993). The criteria cover identifying the problem, defining and representing the problem, exploring possible strategies, acting on the strategies, and looking back and evaluating the effects of the activity.

Furthermore, the result study indicated that students tended to have better skill in solving problem their own compositions than their peers' composition. It is proven by S10 (middle achiever) who could only fulfill the the first and second criteria as an IDEAL problem solver of identifying and defining as well as representing the problems of specific past tenses mistakes in some parts of her peers' compositions. Surprisingly, S11 as high achiever could only fulfill the first criteria in which she identified the grammar mistake but did not define what specific grammar mistakes found in her peers' composition. Based on the interview with the students, most of them have difficulty in identifying and deciding mistakes in tenses used in their peers' compositions. They were not sure whether their peers made mistakes and even though their peers made mistakes they did not have confidence to decide the correct tenses that they peers had to use in their compositions. To add, lack of vocabulary hindered them to make good and understandable sentences in telling the correction through comment feature in instagram.

Below is one of interview parts with S10 through direct message (DM) in explaining difficulty she encountered when she had to solve problem in the process of analyzing her peers' composition:



Picture 1 Interview with S10 through direct message (DM) about her solving problem experiences in the process of analyzing her peers' narrative compositions

Next, here is another one of interview parts with S11 that told about her difficulty to use the suitable choice of words and sentences in delivering her opinion and correction for her peers' composition through comment feature in Instagram:

R : Apakah kamu mengalami kesulitan untuk mengetahui kesalahan-kesalahan di tulisan-tulisan temanmu?

S11 : Lumayan, karena harus teliti melihat kesalahan-kesalahannya itu apa saja.

R : Lalu untuk menyampaikannya susah apa tidak? Misalnya merangkai kata-katanya begitu?

S11 : Lumayan, karena ada beberapa kosakata yang akan saya pakai tidak tahu bahasa inggrisnya serta tenses yang harus digunakan dalam menyampaikan opini harus pakai tenses apa.

R : Lalu solusinya bagaimana waktu itu?

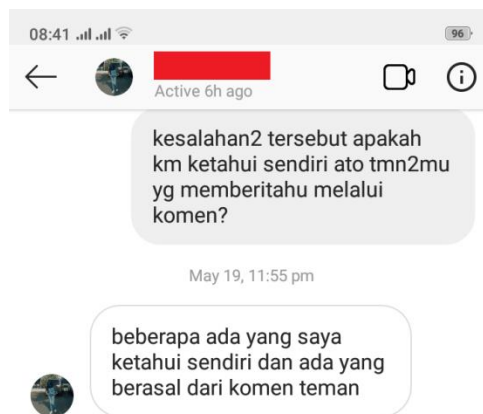
S11 : Saya lihat kamus online dulu dan bertanya pada teman yang lebih tahu.

In terms of solving problem when analyzing their own compositions, both students (S10 and S11) fulfilled four out of five criteria as an IDEAL. Both of them realized they made mistakes after re-reading their own compositions. Therefore they tried to revise them themselves. Another reason was because they disagreed with their peers' comments/ feedback. They claimed that some of the tenses used in their compositions that their peers stated as incorret tenses were actually the correct ones. Therefore, they did not revise based on their peers' feedback comments. Here is one of interview parts with S10 through DM that stated her disagreement for her peers' feedback comments:



Picture 2 Interview with S10 through direct message (DM) that told about her disagreement of her peers' feedback comments for her narrative compositions

Furthermore, another interview through direct message (DM) was also done with S11 that told about her own analyzing and her peers' feedback comments in identifying the mistakes in her compositions as references for her to revise her compositions:



Picture 3 Interview with S11 through direct message (DM) that told about her own analyzing and her peers' feedback comments in identifying the mistakes in her compositions

Finally, since S12 (low achiever) did not give any feedback comments for her peers' composition it can be concluded that she had not apply her problem solving skill as well. As mentioned previously in the interview, her low proficiency of English and her difficulty in understanding the task of giving feedback comments to her peers' compositions hindered her to apply her problem solving skill in analyzing level.

CONCLUSION

As a result, she had not applied her critical thinking and problem solving skills yet. In short, the actual evidence when students analyzed their peers' composition posted in instagram is possible to describe.

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