

## FOSTERING STUDENTS' CRITICAL THINKING SKILLS THROUGH HIGH-LEVEL QUESTIONING IN ANALYTICAL EXPOSITION TEXT

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**Abstract:** This study employed classroom action research and was conducted in two cycles. The main data were students' written texts taken from the first cycle and the second cycle, and the teacher's field notes. The texts were analyzed by examining the schematic structure and the linguistic features of an analytical exposition text. To measure students' critical thinking, the texts were examined using the Critical Thinking Value Rubric developed by the Association of American Colleges and Universities (AACU). The findings showed that there are positive implications for the application of high-level questioning in students' critical thinking skills. Furthermore, in comparison between the data gained in the first cycle and the second cycle, it shows that after the implementation of high-level questioning there are some improvements in all aspects of the critical thinking criteria such as issue, evidence, the influence of context, and conclusion based on the value rubric. Although there are some improvements, in terms of delivering the issue, and showing evidence, the students still have difficulties in explaining and elaborating their ideas clearly.

**Keywords:** *analytical exposition text; critical thinking; high-level questioning.*

### INTRODUCTION

Critical thinking has been considered one of the important skills needed in the 21<sup>st</sup>-century era. It has been marked as an important general skill contributing to academic and career success (Shaw, 2019). Furthermore, due to the massive development of technology and media, it is important for students to be able to filter information critically. It is in line with Kress's (2003) statement that nowadays the change from book to screen and the change from the traditional print-based media to the new information and communication technologies intensify the needs for potential and communicational action by their

users. Students are expected to be able to analyze, and evaluate information, and give their arguments relating to the information they have read. Therefore, as Fisher (2001) argued, to process the information, high-order thinking skills – analyzing, and evaluating – are needed. Critical thinking is urgent to handle the complexity of problems caused by the rapid development of technology and social movements in this era (Ulger, 2018). Hence, more optimal and effective actions should be accomplished by all education institutions to prepare graduates skilled in critical thinking (Ali & Awan, 2021) because the students need to have their critical reasoning, critical self-reflection, and

critical action (Barnett, 2017).

In Indonesia, curriculum 2013 includes Higher Order Thinking skills as one of the goals which inculcate the component of critical thinking skills. The 2013 Indonesian education curriculum highlights the greater importance of thinking and creativity in place of rote learning. Along with the inclusion of thinking and creativity, students are expected to develop questioning skills such as formulating and articulating questions to strengthen their inquiry-related thinking (Gustine, 2014). Thus, in accordance with the potential needs and characteristics of the students, critical thinking is promoted as a part of the demand of the curriculum 2013. Critical thinking is the skill to think critically in analyzing, categorizing, selecting, judging, and evaluating information to make effective decisions.

One of the important aspects that prevent students from improving critical thinking skills is questions; how to ask and what to ask. In education, questions have become an important part of teaching and learning. It sparks conversation and discussion between teacher-students or students-students. Questions also encourage learning in the classroom and it ranges in the level of difficulty, from easy to hard. Teachers usually open the class with questions to lead the students to the material. They also use questions in assessing the students. Statistics show that most teachers ask an average of 300 to 400 questions on a daily basis; however, 60-80% of these questions are low-level questions that only require students to recall something they already learned (Tienken in Remark & Ewing, 2015). The questioning comes naturally to teachers, however, to be done effectively, questioning must be planned, structured, and systematic (Remark & Ewing, 2015). To nurture students' critical thinking, teachers should provide questions that range from low-level – remembering, understanding, and applying – to high-level – analyzing, evaluating, and creating.

In relation to this study, before students move to a higher level of education, they face the responsibility to develop their critical thinking skills, specifically in the area of conveying their argument or opinion toward an issue (King in Park, 2003). One of the typical texts that students learn in expressing their argument towards an issue is Analytical Exposition. Hence, analytical exposition is chosen to see whether high-level questioning can

improve students' critical thinking skills. In this context, critical thinking is required for deciding on receiving information, formulating opinions based on acceptable, logical, and non-subjective reasons, and assuring the correct conclusion (Morales-Obod, Valdez Ramirez, Satria, & Indriani, 2020)

A study about critical thinking skills and high-level questioning has been conducted by Remark and Ewing (2015). In their study, they examined the impact of high-level questioning to increase student achievement in reading. The result shows that high-level questioning has a great impact on the improvement of students' comprehension skills. Moreover, it also helps improve students' metacognition which nurtures critical thinking skills. Thus, it can be concluded that high-level questioning has a positive impact on students' comprehension, metacognition, and critical thinking skills. The study is related to the relation between higher-level questions and critical thinking which is still uncommon in Indonesia. As a result, to fill the gaps and to meet the demands of the 2013 Indonesian education curriculum and the 21<sup>st</sup>-century skills, this study applied higher-level questions to promote students' critical thinking skills in writing an analytical exposition text in the Indonesian context.

## **METHOD**

This study employed a classroom action research design. Action research is a combination of the word action and research. The main purpose of this study is to foster high school students' critical thinking using higher-level of questions. This study attempted to see whether the application of high-level questioning helps improve students' critical thinking. It is relevant to the idea of action research which is an effort to improve the quality of an organization and its performance (Hamied, 2017) and also the enhancement of curriculum and programs, as well as the creation of conditions for improved student learning experiences (Simmons et al, 2021). Furthermore, in an educational setting, the main purpose of action research is to improve learning and teaching than theory building. This research was conducted in two cycles. Each cycle consisted of two meetings. Furthermore, there were four steps in conducting each cycle. Every cycle consists of planning, acting, observing, and reflecting. It is in line with what Ramlal and Augustin (2020) suggested that some reflective

practices can foster individuals' reflective thinking and linguistic skills.

As stated previously, the teaching was carried out in two cycles. Each cycle was conducted in two meetings and contained a four-learning-hour action (one learning hour equals 45 mins). The participants of the study were a class of 11th-grade students, consisting of approximately 37 students. Large class sizes are common in public and private primary and secondary Indonesian schools. All participants in this study ranged from 16-17 years old. In addition, *Bahasa Indonesia* as their mother tongue is mainly used in daily communication while English is used as a foreign language. They were chosen purposively because if we take a look at the 2013 Indonesian education curriculum, analytical exposition text is taught in the first semester of 11<sup>th</sup>-grade class. Moreover, 11<sup>th</sup>-grade students are expected to be able to think critically, for it is one of the goals of the 2013 Indonesian education curriculum.

In addition, in this study, the teacher was involved both as the researcher and educator. There is also an element of purposely and intentionally design in the implementation of higher-level questions in fostering students' critical thinking skills. Then, this research is expected to lead to a change in the teachers' pedagogical practice which is the changes in designing questions (Gustine, 2014). The findings of the study cannot be generalized to other groups or individuals. That means the result of every group will be different and if another researcher finds a way to teach a certain group, it does not mean that this method is more effective than the other (Cohen, 2007).

The data for this study were gathered from various sources: teacher's field notes, and students' written work samples that were collected throughout the study. Firstly, the teacher's field notes were the teacher's diary about what happened in the classroom. The notes contain information about some interactions that occurred within a particular context that is mediated by values (i.e., all children can learn), and norms (i.e., students must raise their hands and be called on before answering a question).

Lastly, in a sample of students' written work, students wrote two analytical exposition texts based on the theme presented in the first cycle and the second cycle. The first cycle talked about "the impact of cell phones" and the second cycle

focused on "bullying". Both texts were analyzed to see whether there are improvements in students' writing or not. A total of 20 texts from 10 students chosen as participants were analyzed to find out the impact of high-level questioning to improve students' critical thinking in writing analytical exposition.

The data in this study were analyzed using multiple analytical frameworks appropriate to research aims and obtained from teacher's field notes and students' written work. Field notes can come in many shapes, forms, and varieties. Some of these include: scripting dialogue and conversation, diagramming the classroom or a particular part of the classroom, or noting what a student or group of students are doing at particular time intervals. However, in this research, the field notes were in a form of notes which contain a particular part of classroom activities and notes of what a student or group of students are doing in the classroom.

Then, students' writing samples were collected to identify the schematic structure and the linguistic features of the analytical exposition text. In addition, students' written texts were analyzed using The Critical Thinking Value Rubric developed by The Association of American Colleges and Universities (AACU). The rubrics articulate fundamental criteria for each learning outcome, with performance descriptors demonstrating progressively more sophisticated levels of attainment. The rubrics are intended for institutional-level use in evaluating and discussing student learning, not for grading (Rhodes, 2009).

## RESULTS AND DISCUSSIONS

### *Results*

The research was conducted in two cycles. In the first cycle, the teaching applied high-level questioning developed by Bloom to foster students' critical thinking. The theme for the first cycle was The Importance of Cellphones. In cycles II, the teaching was similar to the first cycle however it was conducted with some revision and a different theme, *Bullying*.

### *Cycle I*

#### *Planning*

In this stage, the researcher prepared the research instrument to be used for the first cycle such as the lesson plan, the model text, and the high-level

questions that were used for the classroom discussion. Thus, the main activity in the first cycle was in a form of classroom discussion to raise students' participation and motivation in the classroom activity. In preparing the lesson plan, the researcher looked up to the syllabus and formulated the lesson objective and indicators based on that. Furthermore, the researcher picked up one theme for the lesson plan which was *The Impact of Cellphones*. Then, plan the classroom activities from the opening, main activity, and closing.

Secondly, in choosing the text model for the lesson, the researcher looked up the internet and chose several analytical exposition texts about the impact of a cellphone. The text was analyzed in terms of the schematic structure, the linguistic features, and the content. To meet the desired model text, the researcher made some changes and revisions to the text. So, it will be suitable and applicable for the class discussion.

The last is formulating the questions to ask in the classroom. Due to the research purpose, the questions used are based on Bloom's Taxonomy pyramid ranging from low-level questions to high-level questions. The top three bottoms are classified as low-level: remember, understand, and apply. In low-level questions, students are required to remember or recall information and demonstrate an understanding of facts, concepts, and ideas. Meanwhile, from Bloom's Taxonomy pyramid, high-level questions stand in the top three ranks; *analyze, evaluate, and create*. High-level questions require students to think deeply before they answer the question. Students need to analyze, synthesize, evaluate, categorize or apply what they have read or learned.

#### *Acting*

The first cycle was implemented in two meetings. Each meeting was a 2 x 45-minute- time allotment. The classroom activities were based on the lesson plan:

#### *First meeting*

##### *Opening*

Before going to the main activities, the researcher opened the class by giving the students an ice-breaking activity. The activity was related to the theme that was about *The Impact of Cellphone*. The researcher gave the students some questions about the cellphone and relate them to their life. Here, the

researcher introduced the students to high-level questions. Then, students watched a video about cell phones and compared the video with their real life.

##### *Main activity*

In the main activity, the researcher gave each student an analytical exposition text entitled *Teenager and Cellphone* to be read. At first, students read the text by themselves and after that, the students read the text together with the teacher's guide. In addition, some words and sentences that the students did not understand were analyzed together. After that, the classroom discussion began. The researcher gave some questions – low-level questions to high-level questions – related to the text. In the low-level questions, some students participated actively. However, when the questions require some analysis, the students did not participate actively. The researcher should mention their names so they will answer but then many of them could not answer the questions.

##### *Closing*

In the closing, the researcher and students reflect on what they have learned that day. The researcher told the students about the activity for the next meeting.

#### *Second meeting*

##### *Opening*

Just like in the first meeting, before going to the main activities the researcher opened the class by giving the students an ice-breaking activity. The activity was related to the theme that was about *The Impact of Cellphone*. The researcher gave the students some questions related to their responses about the impact of cellphone in their life.

##### *Main activity*

In the main activity, the researcher gave students guided questions to help them write their analytical exposition text about cellphones. The questions are based on Bloom's Taxonomy ranging from low-level to high-level questions. The students were free to explore their ideas by answering the questions and writing them in a form of text. They can brainstorm with their peers or by reading books in the library.

### *Closing*

By the end of the session, the students collected their writing. Then, the researcher and students reflect on what they have learned that day. The researcher told the students about the activity for the next meeting.

### *Observing*

The observation was conducted during the classroom activity. As a teacher and researcher, the observation was done during the learning process between the students and the teacher. The observation result was written in a form of a teacher's field notes. Based on the observation, the learning process that happened in the classroom is quite good. However, implementation of high-level questioning in the classroom can be hard and tricky, especially in getting the students' attention. When the researcher asked some questions to the students, it was hard to get them to answer and participate in solving the questions given. For low-level questions whose answers can be found in the passage, some students tried to answer them. However, for high-level questions which require students to think out of the box no one wanted to try, possibly due to the students who are not familiar with high-level questions. They are used to answering low-level questions, types of questions whose answers can be found in the passage.

### *Reflecting*

After the implementation of the first cycle was done, the researcher reflected on the planning, acting, and observing. This reflection was done to find out some weaknesses, and problems during the implementation of the first cycle. Therefore, it can help the researcher in improving the learning process in the second cycle. The data gained from the first cycle was students' written text about *The Impact of Cellphone* in a form of an analytical exposition text. The text was analyzed using the critical thinking value rubric developed by the Association of American Colleges and Universities. The score of each criterion ranges from 1 – the lowest score – for benchmark, 2 and 3 for milestones, and 4 – the highest score – for capstone.

## *Cycle II Planning*

The planning of the second cycle was the improvement of the first cycle based on the analysis and reflection. The instrument was also similar. However, in planning the second cycle, the researcher as the teacher made some changes in the main activity to get a better result. The changes were: (1) The theme for the second cycle changed. In the second cycle, students discussed the topic of *Bullying*. (2) Before the classroom discussion began, the students worked in a group of four to answer the questions related to the text about *Bullying*. After each group finished their discussion, classroom discussion began. (3) Students were given "wait time". It is said that one factor that can have powerful effects on student participation is the amount of time a teacher pauses between asking a question and doing something else. Students need at least three seconds to comprehend a question, consider the available information, formulate an answer, and begin to respond.

### *Acting*

Similar to the first cycle, the second cycle was implemented in two meetings. Each meeting was a 2 x 45-minute-time allotment. The classroom activities were based on the lesson plan:

#### *First meeting*

##### *Opening*

Before going to the main activities, the researcher opened the classroom by giving the students an ice-breaking activity. The activity was related to the theme that was about *Bullying*. The researcher gave the students some questions about bullying and relate it to their life. Here, the researcher introduced the students to high-level questions. Then, students watched a video entitled *Kids React to Bullying*. After watching the video, students discussed and answered some questions related to it.

##### *Main activity*

In the main activity, the researcher gave each student an analytical exposition text entitled *Bullying – Has this Become a Problem?* to be read. At first, students read the text by themselves and after that, the students read the text together with the teacher's guide. In addition, some words and sentences that the students did not understand were analyzed together. Then, the class was divided into

9 groups. The researcher gave some questions – low-level questions to high-level questions – related to the text. Each group was given time to discuss the answer to the questions. After each group had finished the discussion, the classroom discussion began. Just like in the first cycle, in the low-level questions, the students participated actively. However, when the questions require some analysis and thinking, some students participated actively and joined the discussion. Although some students were still reluctant at that point they tried and it is better than in the first cycle.

#### *Closing*

In the closing, the researcher and students reflect on what they have learned that day. The researcher told the students about the activity for the next meeting.

#### *Second meeting*

##### *Opening*

Just like in the first meeting, before going to the main activities the researcher opened the classroom by giving the students an ice-breaking activity. The activity was related to the theme that was about *Bullying*. The researcher gave the students some questions related to their responses about bullying in school.

##### *Main activity*

In the main activity, the researcher gave students guided questions to help them write their analytical exposition text about bullying. The questions based on Bloom's Taxonomy range from low-level to high-level questions. The researcher also used *wait time* so the students had time to think before answering. The students were free to explore their ideas by answering the questions and writing them in a form of text. They can brainstorm with their peers or by reading books in the library.

##### *Closing*

By the end of the session, the students collected their writing. Then, the researcher and students reflect on what they have learned that day. The researcher told the students about the activity for the next meeting.

##### *Observing*

Just like in the first cycle, observation was

conducted during the classroom activity. As a teacher and researcher, the observation was done during the learning process between the students and the teacher. The observation result was written in a form of a teacher's field notes. Based on the observation, the learning process that happened in the classroom has improved significantly compared to the first cycle.

As stated previously, the implementation of high-level questioning in the classroom can be hard and tricky especially, in getting the student's attention. However, after making some revisions to the main activity, students started to participate actively during classroom discussions. Thus, the learning process went well.

##### *Reflecting*

After the implementation of the second cycle was done, the researcher reflected on the planning, acting, and observing. This reflection was done to seek whether there are some improvements in students' critical thinking or not. The data gained from the second cycle was students' written text about *Bullying* in a form of an analytical exposition text. Just like in the first cycle, the text was analyzed using the critical thinking value rubric developed by the Association of American Colleges and Universities. The score of each criterion ranges from 1 – the lowest score – for benchmark, 2 and 3 for milestones, and 4 – the highest score – for capstone.

##### *Discussion*

##### *The impact of high-level questioning on student's critical thinking skills*

Based on the data collected from the student's written texts show positive impact and negative impact. From the first cycle, the impact of the high-level questioning on students' critical thinking skills can be seen in the figure below.

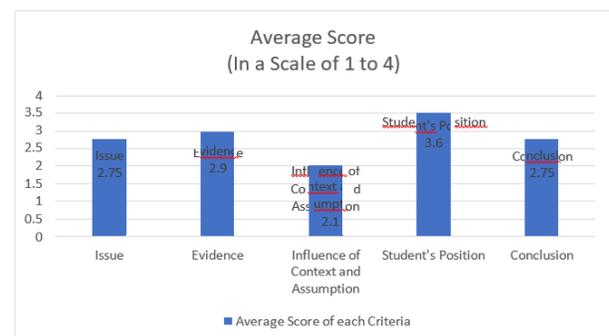


Figure 1. Average score of student's written text from the first cycle

From the figure above, it can be seen that the average score of students' critical thinking based on the analytical exposition they have written in the first cycle range from 2 to 3. The data were taken after students written texts were analyzed using the critical thinking value rubric. From the rubric, students' critical thinking is at the milestones level. In addition, from the second cycle, the impact of the high-level questioning on students' critical thinking skills can be seen in the figure below.

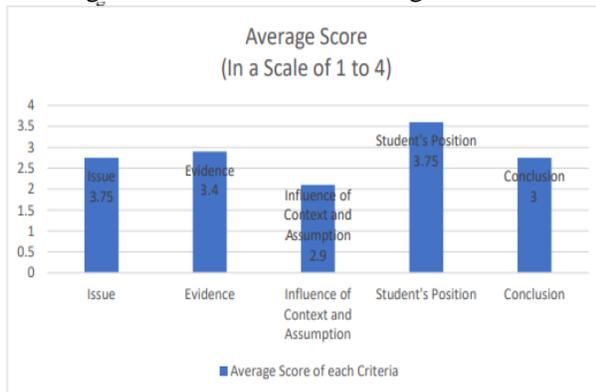


Figure 2. Average score of student's written text from the second cycle

Similar to the first cycle, it can be seen that the average score of students' critical thinking based on the analytical exposition they have written in the second cycle range from 2 to 3. The data were taken after students' written text was analyzed using the critical thinking value rubric.

However, if we compare the average score between the first cycle and the second cycle there are some improvements in each criterion. It can be seen in the figure below.

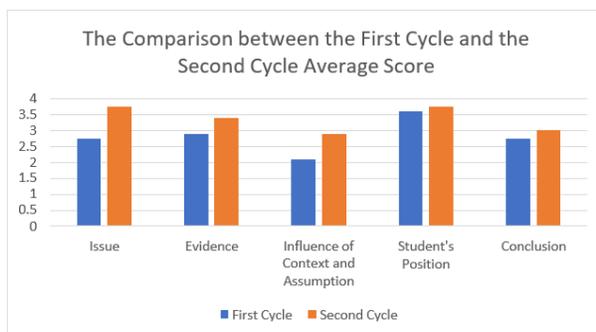


Figure 3. Comparison between the average score of student's written text from the first cycle and the second cycle

Based on the figure of comparison between the

first cycle and the second cycle average score, although the level of student's critical thinking is still at the milestones level there are improvements in all aspects of the critical thinking criteria; issue, evidence, the influence of context and assumption, student's position, and conclusion.

First, there is a significant improvement in the issue aspect from students written text in the first cycle to the second cycle. In delivering the issue, students were able to state, describe and clarify the topic so that understanding is not seriously impeded by omissions (Rhodes, 2009). The students are able to describe the topic and clarify some actions that can be considered bullying. By being able to state, describe, and clarify the issue, students already think critically because, in critical thinking, the issue is one of the essential components (Emilia, 2005). Furthermore, by stating, describing, and clarifying the issue, students are able to spark controversy or disagreement regarding some fundamental concern about the issue which is in line with the purpose of analytical exposition (Mills & Dooley, 2014).

Second, there is also an improvement in students' written text in the evidence aspect. After analyzing the students' written text using the value rubric, the information from the text is taken from source(s) with enough interpretation/evaluation to develop a comprehensive analysis or synthesis (Rhodes, 2009). This shows how students already try to think critically by giving evidence and reason in their writing. Moreover, evidence or reason is another essential aspect of critical thinking. It is the central point of an argument, as it provides support for claims and it is by means of reasoning that we extend and defend a claim or knowledge (Emilia, 2005). It also shows that students can think in higher order thinking by evaluating; they relate their experience to the context (Fisher, 2001).

Third, it can be seen that there is an improvement in the influence of context and assumption aspects. Based on the analysis, students are able to question some assumptions by identifying several relevant contexts when presenting a position (Rhodes, 2009).

Fourth, in comparison to the text in the first cycle and the second cycle students are getting better at showing their stance toward an issue. From the value rubric, a good specific position is one that takes into account the complexities of an issue and acknowledged others' points of view within the

position (Rhodes, 2009). As an example, student D has written a text about the cellphone and he stated that "Even though cell phones have a lot of negative effects but it is useful for us." From this statement, he is not only pointing out his stance but also acknowledging others' points of view about cellphone. It can be concluded that students are able to evaluate: judging the worth, credibility, or strength of accounts (Tiruneh, 2014).

Last, in terms of the conclusion, it can be seen that the students also make an improvement in this aspect. Based on the analysis, students' conclusion is stated critically because it is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) which are identified clearly.

#### *Challenges faced by the teacher in developing student's critical thinking skills through high-level questioning*

After conducting the action research in two cycles, there are some challenges faced by the researcher as a teacher. The challenges come from the students and the researcher. The challenges that come from the students are mainly in getting students to participate and be motivated to study.

However, after doing some reflection by the end of the first cycle, the researcher found a way to solve those problems. For unresponsive students, the researcher applied "wait time" in the second cycle. In addition, before students have a classroom discussion, they work in a small group first. After giving students a chance to discuss the questions and answer them in a small group first before going into the classroom discussion, some students become more involved in the classroom discussion. They participate in answering the questions and start giving responses in the classroom discussion. Thus, it is better than in the first cycle. However, some students are still unresponsive, some did not participate in the small group or classroom discussion, and some even discuss other things rather than discussing the topic and the answer to the questions. And for the students who are unfamiliar with high-level questions, the researcher made some revisions to the questions by making the questions simpler.

Implementing high-level questioning in the classroom can be hard and tricky. Full preparation is needed not only in preparing the students but also in preparing the teacher. In the first cycle, as

the researcher and the teacher, sometimes it is hard to realize what kind of questions come out from the teacher. It is easier to ask a question from the low-level such as remembering, understanding, and applying. However, in the second cycle after conducting a reflection, those problems can be handled by keeping track of the questions by writing the questions in a list and checking the Bloom Taxonomy pyramid. Thus, in the second cycle, the researcher can track the questions and how to handle students' responses. Another challenge that the researcher face during the research is timing. Sometimes it is hard to find the right timing in asking a question. So, to solve that the researcher used "wait time" to help teachers prepare and give students time to answer. It also allows enough time for the student to think through the problem and increases the analytical and problem-solving skills of students.

#### **CONCLUSION**

To conclude, regarding the impact of high-level questioning in fostering students' critical thinking, students show their capability to think critically by analyzing the issue and evaluating the evidence to be put in the argument section. Furthermore, in comparison between the data gained in the first cycle and the second cycle, it shows that after the implementation of high-level questioning there are some improvements in all aspects of the critical thinking criteria; issue, evidence, the influence of context, assumption, student's position, and conclusion. Although there are some improvements in terms of delivering the issue, stating their stance, and concluding the text, the students still do not explain it clearly. In addition, based on the analysis of students' written text using the critical thinking value rubric, the level of students' critical thinking is still at the milestones level, quite good but needs improvement, especially in the influence of context assumption.

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