

Chapter in Book

# Social Media as A Tool for Formative Assessment In Chemistry Form Four

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**Abstract:** *In this contemporary era, social media has become accessible to almost everyone, including high school students. Most students use social media solely for networking, having conversations, sharing information, and creating web content. Social media addiction among students may cause low academic performance. While it is impossible to eliminate social media usage, providing beneficial tools can help reduce the negative impact on students. Using social media as a tool for formative assessment can help students study more efficiently. The idea of creating a quiz through an Instagram filter was developed. It is designed for students taking Chemistry for their "Sijil Pelajaran Malaysia" (SPM) as the examination follows the "Kurikulum Standard Sekolah Menengah" (KSSM) syllabus and covers basic information about the subject. This quiz can be done by students individually using a mobile phone through the Instagram application. This Instagram filter quiz will allow students to revise and study the fundamentals of Chemistry efficiently without depending on textbooks or friends to help. On top of that, the filter enables the students to keep their fascination with STEM, all while encouraging more students to spend their time wisely on social media.*

*Keywords:* social media; formative assessment; quiz.



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## 1. INTRODUCTION

Social media addiction becomes the downfall among students, especially in their academic performance; this can be overcome with creative and beneficial tools such as formative assessments (Munoli, 2020). The assessment is an Instagram filter designed for students taking Chemistry for their Sijil Pelajaran Malaysia (SPM). The quiz can be done by students using a mobile phone or any device that can access the Instagram application and website. This way, the filter allows them to recall information and facts with just a click of a button. On top of that, the interactive quiz motivates the students to learn and spend their time wisely on social media. An activity to study the effects on top of an interview and survey session has been conducted to unveil information about the effectiveness of our filter.

## 2. METHOD & MATERIAL

### 2.1 Material and Development

In developing the cards for the quiz filter, we used Canva, a graphic design tool. All the questions and answers were derived from the KSSM Chemistry Form 4 textbook. To be precise, the questions were obtained from Form 4, Chapter 2: Matter and the Atomic Structure. Later in creating the filter, the application Spark AR was used. The filter consists of 15 short response questions along with their respective answers. A five-second timer will be set as the screen is tapped to allow students to answer one question. Once the timer is up, the question will flip to unveil the correct answer.

### 2.2 Methodology

The participants for the study of the effectiveness of the Instagram filter were 12 students, consisting of 9 females and three males, taking Chemistry for their SPM. Collectively, the participants were all of equivalent age, which was the age of 16. Before conducting the activity to study the effectiveness, we briefed the participants on using the Instagram filter. Later, they were all given 10 minutes each to answer as many questions as possible. The participants utilised our Instagram application on their phones to carry out this activity. Before ending the activity conducted, the interview and survey session was carried out after 10 minutes of using the Instagram filter.

## 3. FINDINGS

The results of the data collected were interviews and surveys. The five questions asked were adapted from a research by (Hillman, 2012). Five out of twelve of the students, who take Chemistry as a subject for Sijil Pelajaran Malaysia (SPM), had taken part in our data-collecting process. Three students were verbally interviewed to acquire their opinion based on their Chemistry Quiz Filter experience. On the other hand, two of the students contributed their handwritten responses to share their points of view on the filter.

### 3.1 Interview Survey

The three students have found the Chemistry Quiz Filter very advantageous in memorising facts. The questions provided in the quiz assisted them in recalling information in a fun and interactive way. On top of that, the quiz filter helps in preparing for class. This is because the questions have enhanced their understanding and gained insight before stepping into a new chapter. Besides that, the Chemistry Quiz Filter is beneficial in preparing for exams. The students, by all accounts, have been able to answer questions more efficiently with a better understanding after using the quiz filter. Furthermore, the quiz filter is easily accessible as periodically as desired into the bargain that the ability to refer to the answer after answering the questions.

### 3.2 Handwritten Survey

As aforementioned, two male and female students found that the Chemistry Quiz Filter is equally very helpful to them. Student 1 had answered Question four (How useful was the ability to take the quiz on the Instagram filter as many times as you wanted?), in the survey handouts, with a response that stated she was able to answer 13 out of 15 of the questions provided in the filter. In the interval, Student 2 wrote their answer for Question 3 (If you used the Instagram filter to study for exams, how helpful was it?), disclosing that he found it to be convenient since he could easily recall what he had learnt before the activity was conducted.

#### 4. DISCUSSION

In hindsight of the activity conducted for our Instagram filter, we could measure the filter's effectiveness with much success. We gathered ample information about the filter based on the interviews and surveys we handled. Via the discussions held, all three students found it reasonably practical, especially for the process of understanding and recalling past lessons in their Chemistry classes in a fashion of fun and instructiveness. Meanwhile, the surveys we handed out proved further how beneficial this filter is for the students. To pick up the threads, the data collection provided sufficient information to determine the effectiveness of the Instagram filter. Through our thorough findings, we aimed to measure the practical impact this filter had bestowed upon the students. They had collectively aided us throughout the journey of our data collection. As we analysed the students, it is evident that the filter is functional and worth their time in improving the fundamental knowledge of Chemistry based on Chapter 2 of the Form 4 syllabus; Matter and the Atomic Structure.

#### 5. CONCLUSION

In conclusion, the Chemistry Quiz Filter is an Instagram filter that helps reduce social media addiction impacts on STEM students. The quiz filter developed by utilising Canva and the Spark AR application follows the Kurikulum Standard Sekolah Menengah (KSSM) syllabus. It covers essential information about the subject. The effectiveness of the filter was successfully measured from surveys and interviews. It has been proven that the students who were interviewed enjoyed the Chemistry Quiz Filter and found that the quizzes were helpful in their studies and worth their time. Additionally, they found this filter practical to further understand challenging topics while practising active recall to remember information easily. This also proves that the Instagram filter quiz allows students to revise efficiently without solely depending on textbooks and use social media more wisely. Therefore, this quiz filter successfully reduces the negative impact towards students by making social media a beneficial tool.

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