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“Optimizing Innovation in Knowledge, Education and Design”

EXTENDED ABSTRACT



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3.	MOBILIAID: Robotic Independence of Disabilities <i>Nur Husna Serip Mohamad & Nur Hana Serip Mohamad</i>	243-245
4.	Investigating the Acceptance of Course File Electronic Knowledge Acquisition PPPG (CEKAP)System Via UTAUT Model <i>Mastura Mohamad, Rozita Mengen, Nor Farhana Mohd Azmi, Noorsuraya Mohd Mokhtar & Nurul Zahidah binti Md Juperi</i>	246-250
5.	XL2S Pan Borneo Vs Rajang River Boardgame 2.0 (Empowering Fitness and Fun: A Board Game for Inclusive Physical Activity Among People with Disabilities) <i>Suhardi bin Kram, Abbylolita Sullah, Siti Nurr Atika binti Mohd Sanif, Luke anak Nikol, Asmalini binti Che Abu Shafie, Gordon Nicolaus Jemat Anchang, Ashley Irenaeus bin Jeck</i>	251-254
6.	MoTSEL: Model of Technology-Supported Learning for Special Educational Needs Learners in Institutions for Higher Learning <i>Roslinda Alias, Nor Aziah Alias & Azwadi Mokhtar</i>	255-261
7.	E-Care Sentinel: ECG- Based Emergency Alerts <i>Rosziana Hashim, Suziana Ahmad, Gloria Raymond Tanny, Dayanasari Abdul Hadi, Ahmad Alif Ahmad Aina, Ahmad Firdaus Mohd Rasdi & Muhammad Harries Ezary Ahmad Khairi</i>	262-269
8.	Enhancing Dyscalculia Identification Through an Innovative 3D Game Framework <i>Sazilah Salam, Bambang Pudjoatmodjo, Ahmad Naim Che Pee & Rikman Aherliwan Rudavan</i>	270-274

CATEGORY: AST ACADEMIC INVENTOR

1.	Program Outcomes Monitoring System for Civil Engineering Students (POSCES) <i>Md Rasul Mohamad Nor, Hazrina Ahmad, Nurjuhanah Juhari, Norlizan Wahid, Noor Syafeekha Mohamad Sakdun, Shafienaz Ismail & Ruqayyah Ismail</i>	275-279
2.	Web-Based System for Dyslexic: A Screening and Learning Style Recommendation <i>Nur Melissa binti Mohammad Faisal Wee, Mohd Zaki bin Sadik, Mohamad Hafiz bin Mohd Yusof, Nurul Hidayah binti Mohd Yusof & Ummi Qaisara Faqihah binti Reman</i>	280-282
3.	2DAMP: The Novel of (2D)-Aminoethyl MethacrylatePerovskite for Ammonia Gas Sensor <i>Hasyiya Karimah Adli, Muhamad Yuzaini Azrai Mat Yunin, Norfatihah Mohd Adenam & Hadhrami Ab Ghani</i>	283-288
4.	An Attractive Approaches in Studying Basic OC (Organic Chemistry) <i>Ropisah Binti Me, Nur Syakilla Asyiqin Binti Hasan & Nur Syaida Maisarah Binti Hasan</i>	289-292

Assalamualaikum warahmatullahi wabarakatuh,



First and foremost, I would like to express my gratitude to the organizing committee of i-Spike 2023 for their tremendous efforts in bringing this online competition a reality. I must extend my congratulations to the committee for successfully delivering on their promise to make i-Spike 2023 a meaningful event for academics worldwide.

The theme for this event, 'Optimizing Innovation in Knowledge, Education, and Design,' is both timely and highly relevant in today's world, especially at the tertiary level. Innovation plays a central role in our daily lives, offering new solutions for products, processes, and services. By adopting a strategic approach to 'Optimizing Innovation in Knowledge, Education, and Design,' we have the potential to enhance support for learners and educators, while also expanding opportunities for learner engagement, interactivity, and access to education.

I am awed by the magnitude and multitude of participants in this competition. I am also confident that all the innovations presented have provided valuable insights into the significance of innovative and advanced teaching materials in promoting sustainable development for the betterment of teaching and learning. Hopefully, this will mark the beginning of a long series of i-Spike events in the future.

It is also my hope that you find i-Spike 2023 to be an excellent platform for learning, sharing, and collaboration. Once again, I want to thank all the committee members of i-Spike 2023 for their hard work in making this event a reality. I would also like to extend my congratulations to all the winners, and I hope that each of you will successfully achieve your intended goals through your participation in this competition.

Professor Dr. Roshima Haji Said
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WELCOME MESSAGE (i-SPIKE 2023 CHAIR)



We are looking forward to welcoming you to the 3rd International Exhibition & Symposium on Productivity, Innovation, Knowledge, and Education 2023 (i-SPIKE 2023). Your presence here is a clear, crystal-clear testimony to the importance you place on the research and innovation arena. The theme of this year's Innovation is "*Optimizing Innovation in Knowledge, Education, & Design*". We believe that the presentations by the distinguished innovators will contribute immensely to a deeper understanding of the current issues in relation to the theme.

i-SPIKE 2023 offers a platform for nurturing the next generation of innovators and fostering cutting-edge innovations at the crossroads of collaboration, creativity, and enthusiasm. We enthusiastically welcome junior and young inventors from schools and universities, as well as local and foreign academicians and industry professionals, to showcase their innovative products and engage in knowledge sharing. All submissions have been rigorously evaluated by expert juries comprising professionals from both industry and academia.

On behalf of the conference organisers, I would like to extend our sincere thanks for your participation, and we hope you enjoy the event. A special note of appreciation goes out to all the committee members of i-SPIKE 2023; your dedication and hard work are greatly appreciated.

Dr. Junaida Ismail

Chair

3rd International Exhibition & Symposium Productivity, Innovation, Knowledge, and Education 2023 (i-SPIKE 2023)

AN ATTRACTIVE APPROACHES IN STUDYING BASIC OC (ORGANIC CHEMISTRY)

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ABSTRACT

Traditional ways of learning have indirectly affected students' creativity in memorizing and understanding a topic of basic organic chemistry. This time-honored of learning needs to be changed in the hope of keeping the interest of students in learning more complex subjects like organic chemistry. Basic organic chemistry is a study of structure, properties, and reactions of organic compounds that consist of carbon-hydrogen bond or carbon-carbon bond within their structures. It is important to learn about basic organic chemistry because it is a study of life since every matter that we use in our daily life is composed of organic compounds. Therefore, understanding organic chemistry is crucial and various approaches can be taken to engage society to enjoy learning organic chemistry since organic chemistry is a killer subject. In this study, several attractive approaches have been discussed to develop creativity and interest in learning organic chemistry. The mind mapping concept is one of the methods that helps students to organize their thoughts and has shown the ease of remembering ideas. Alternatively, online learning platforms such as quizzes and kahoot is another attractive way to enhance learning activity. These approaches are as boosters that must try to enjoy learning organic chemistry and perhaps can easily understand it.

Keywords: Organic Chemistry, Attractive Approaches, Mind Mapping, Online Platform, Quiziz

INTRODUCTION

Organic chemistry is one of the subjects that are discovered on organic compounds such as alkanes, alkenes, alcohols, benzene, carboxylic acid, ester, amines and some more. Believe it or not, most of the matter surrounding us is made of organic compounds. For example, colorful fabrics are made from polyester (one of ester derivative), vinegar and some other acid source from derivative of carboxylic acid, and most vitamin and medicine are made of amines derivative. However, the study of these organic compounds is quite complex due to several factors that should come into consideration such as their structure, properties, preparation, reaction, and mechanism. These challenges are compounded by the need for students to develop specific learning strategies (Grove & Bretz, 2012; Hein, 2012).

Previously, students are more concentrate on textbooks, classrooms, and passive learning methods. New learning era nowadays, there are many attractive approaches to study organic chemistry. Most information can be gotten from e-books that are easily accessed through the internet. In general, there are a huge attractive method to enhance learning process such as through colorful flashcards, attractive mind mapping, online learning platform such as quizizz and kahoot, booklets, video and so forth (Connor, 2023; Fadillah, 2023; Halili, 2019; Kritiz, 2020; Malissa & Syuhaidi, 2021). In this study we discovered two attractive approaches such as attractive mind mapping and online learning platform to better understand organic chemistry.

MIND MAPPING CONCEPT

Since there are a lot of things that need to be learned and understood when studying organic chemistry, the best approach to learn it is by using the mind map. This is because a mind map can ensure a person recalls and remembers information that they had been studied. This can be proven by several research in which people tend to easily remember something that is visualized that something written since mind mapping is a way to visualized written points in any writing, therefore by using mind map, someone can remember and recall information easily. Furthermore, mind map can further sharpen a person's understanding and knowledge in a matter because each point in the mind map is a continuation of the previous points, therefore a person will understand more clearly related to a topic by using mind map and make a complex idea to be more understandable.

Mind maps are flexible since mind mapping is a versatile tool to present overall data. It also can be created by all ages in various fields throughout the ages. This can be proven when this mind mapping concept is used since 3rd Century by Porphyry of Tyros that graphically visualized Aristotle's characteristics. This mind mapping concept was later brought and developed by Tony Buzan in the 20th century to the mainstream and has been widely used until this century. Based on research done by Fadillah (2023), many of the students had a positive perception on the use of mind mapping, and they perceived that mind mapping is an effective way in helping them to manifest their ideas. This research illustrated that mind mapping facilitates students to organize their thoughts first before writing something down. In addition to that, mind mapping also has shown the ease of remembering ideas. With this in mind, we believe that mind mapping is a significant method in learning as it offers abundance benefits as one of the attractive approaches to study Organic Chemistry. Figure 1 shows some attractive mind mapping of certain organic compounds.

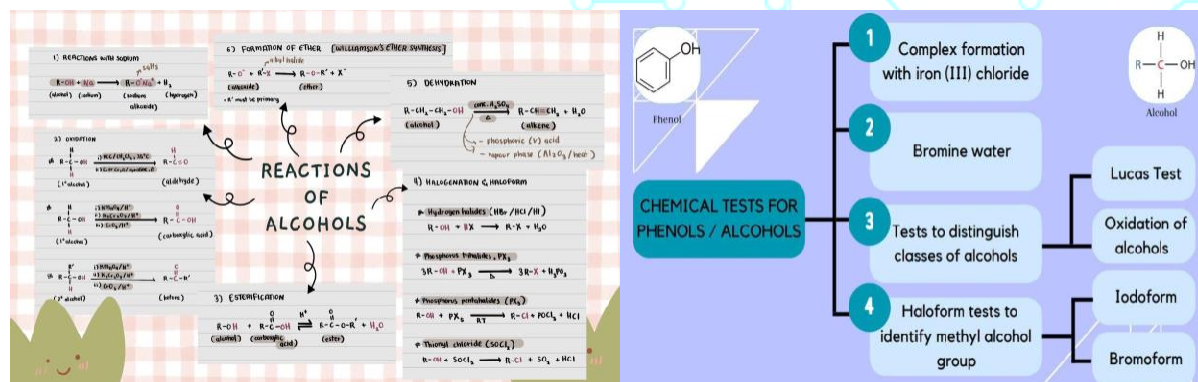


Figure 1. Several examples of attractive mind mapping.

ONLINE LEARNING PLATFORM

Alternatively, another attractive approach in studying organic compounds is through online learning platforms such as quiziz and kahoot. This platform has many advantages in this modern era where everything needs modern technology. It is because they are fun and engaging students and a great way to keep students interested and engaged in the active learning process. According to Malissa & Syuhaidi (2021), e-learning platform supports student-teacher and student-student interactions and shows effectiveness toward active learning concepts. The online learning platforms also help students to learn more effectively as compared to just listening to a lecture or reading a textbook. Furthermore, this online learning platform can provide immediate feedback and can help students to improve their weakness. In addition, this approach is an effective way to reduce student's stress level. Students will enjoy playing games more than assessment in traditional methods. Figure 2 shows several examples of online learning approaches.

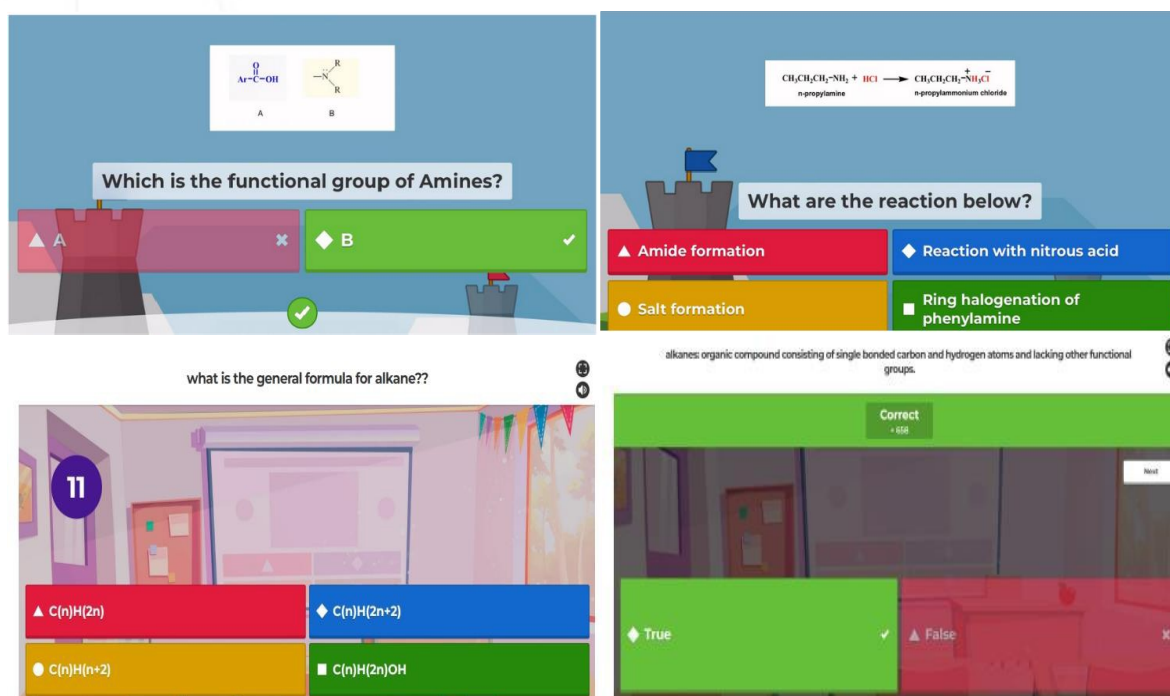


Figure 2. Several examples of online learning approaches.

CONCLUSION

The innovation in transforming the traditional way of learning into attractive approaches benefits most of the teachers and students especially for applied sciences students. Mind mapping approaches give a clear structure of overall information in terms of visual organization and make it easy to understand. While online learning platform such as quiziz or kahoot exposed the students in digitalization concept of attractive and fun e-learning. The other online learning tools may play a significant role in enhancing the discovery of organic chemistry and it is still open for further investigation.

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