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An Evaluation of the Buzan Mind Mapping Module as a Guide for Teachers on Note-Taking Technique

Tee Tze Kiong
Universiti Pendidikan Sultan Idris
Jailani Bin Md Yunos, Razali Bin Hassan, Yee Mei Heong, Mimi Mohaffyza Binti Mohamad and Atan Bin Hj. Hussein
Universiti Tun Hussein Onn Malaysia
Baharom Bin Mohamad
Universiti Malaysia Sabah
Widad Binti Othman
Open University Malaysia

Abstract

Students should be well equipped with efficient note-taking techniques to enable them to learn and achieve better results in academia. A self-instructional Buzan Mind Mapping module was developed with as a guide for teachers to facilitate their students in learning note-taking techniques. Thus, the purpose of this research was to evaluate the qualities of the self-developed Buzan Mind Mapping module. The development of the Buzan Mind Mapping module was based on the Meyer Model and eight experts evaluated the qualities of the module. Fleiss' Kappa for the inter-rater reliability score for the instrument rating scale for the evaluation of the qualities of a module was $\kappa = .7167$*, which can be taken to represent constant agreement among raters. Analysis on the quality evaluation revealed that eight raters (content and design experts) showed an agreement on satisfactory level and above for all 34 items. Based on the positive feedback on the qualities of the module, we recommend that the module be tested on the effectiveness for note-taking among secondary school students.*

Keywords *Note-taking technique, self-instructional module, Buzan mind mapping, quality*

INTRODUCTION

Boch and Piolat (2005) stressed that even though techniques for understanding and writing texts are widely taught and practised throughout a student's school and university career, very few students are taught even basic "note-taking" skills. Therefore, teachers should be able to deliver efficient note taking techniques to their students. Although a variety of note-taking techniques may appear to be an easy solution, there are many constraints within the teachers and school context. Therefore, using the Buzan Mind Mapping technique as a tool and modules as a strategy for teaching and learning note-taking techniques can be an alternative approach which can make significant contributions.

Meyer (1988) argued that modules are not just job sheets or old style work units or chapters of books with questions added. A module is a planned series of learning activities designed carefully to assist the learners to accomplish certain specific objectives (Klingstedt, 1971). In this case, our job in education is to provide both the contexts for developing thinking, and the confidence and competence in using knowledge tools. Both can be supplied using visual tools (Caviglioli *et al.*, 2002).

Buzan Mind Mapping is a powerful graphic technique and it is a very famous thinking tool (Othman *et al.*, 2010; Buzan, 2005b; Budd, 2004). It converts long, monotonous information into an organized, colourful, and memorable diagram that works in line with the brain's natural way of doing things (Doss, *et al.*, 2010). Doss *et al.* (2010) also stress that mind mapping is fun. It makes learning easy. Mind mapping enables a lesson or a chapter from a book to be condensed onto a single page. The Buzan mind map has a structure that radiates from the centre and uses lines, colours and images according to simple, brain-friendly concepts.

PROBLEM STATEMENT

A research had been carried out by Tee and Jailani (2010) with the purpose of investigating the needs of teaching higher order thinking skills for lower secondary school students in Malaysia. According to Tee and Jailani (2010), a majority of the teachers agreed that they needed a more systematic and consistent note-taking technique for their students. A majority of the teachers also agreed that the Buzan Mind Mapping technique was the most suitable technique for their students to take notes from the text book. Factors such as time constraint and lack of information on note-taking techniques caused a majority of the teachers to agree on using a modular approach for individualized learning to deliver the note-taking technique to the students. Based on the problems, a self-instructional Buzan Mind Mapping module was developed. Thus, the purpose of this research was to evaluate the qualities of the Buzan Mind Mapping module.

BUZAN MIND MAPPING

Buzan (2002) notes that the Buzan mind map is the easiest way to put information into the brain and to take information out of the brain. It is a creative and effective means to note-taking that literally maps out a person's thoughts. Furthermore, visual tools can help a person to become more engaged, enthusiastic and better thinkers (Caviglioli *et al.*, 2002). Buzan expounds that Buzan Mind Mapping is particularly adaptive for reading, revising, note-taking and planning for examinations efficiently. It is invaluable for gathering and ordering information and for identifying the key trigger words and facts from:

(i) Reference books, textbooks, primary and secondary source books.
(ii) Lectures, tutorials, course notes and research materials.
(iii) Your own read.

Caviglioli *et al.* (2002) also described that visual tools free up short-term memory, enabling the thinkers to focus, concentrate and organize. Buzan (2005a) highlighted

that Buzan Mind Mapping is able to increase the speed of thinking. Besides that, Buzan Mind Mapping also gives infinite flexibility and explores the outer reaches of the thinking where original ideas abide.

THE NEEDS OF TEACHING NOTE TAKING TECHNIQUE AT SECONDARY SCHOOL

According to the needs analysis of teaching higher order thinking skills for lower secondary school in Malaysia that had been carried out by Tee and Jailani in 2011, about 90% out of 384 secondary school teachers in Malaysia agreed that the students should use the Buzan mind map as their notes and it is most suitable for the revision purpose. The teachers also complained that they had difficulty in delivering note-taking techniques to the students for their subjects. On the other hand, the teachers agreed that there should be a standardized note-taking technique for the students. They were confident that the students could achieve better results for their subjects if they apply the Buzan Mind Mapping technique for note-taking. Due to time constraint, lack of information on note-taking techniques, appropriate teaching methods and a low confidence level, they proposed using a module as an alternative approach in delivering the Buzan Mind Mapping technique for note-taking.

Buzan Mind Mapping module as a guide for teachers

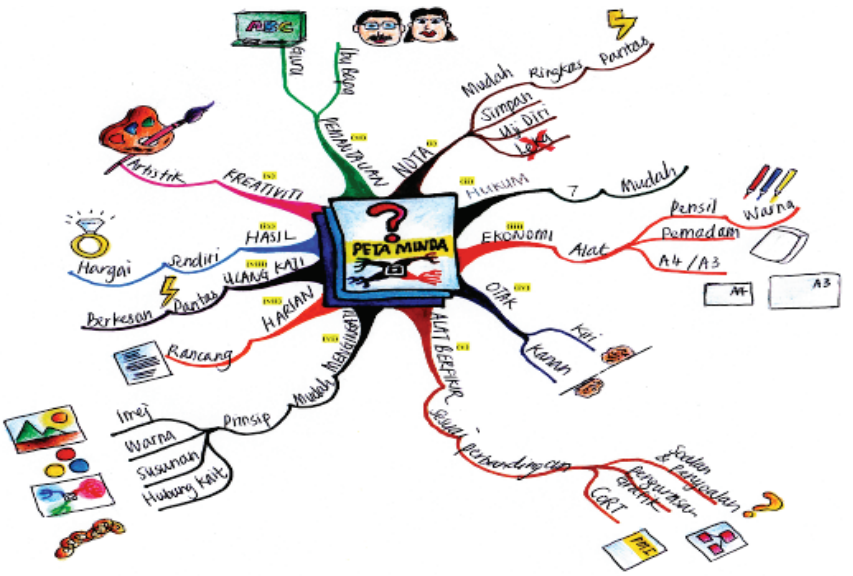
The Buzan Mind Mapping module was completed with instructions on how to use the module. Most importantly, the module teaches how to transfer the content from a textbook into a single piece of the Buzan Mind Map through detailed steps.

The teacher can use the module as a guide and plays the role as a facilitator when students are using the Buzan Mind Mapping module when learning the note-taking technique. The teacher will first explain the purposes of note-taking to the student such as:

(i) Making notes on a book helps the student to focus on the content and to remember it. The more the student makes notes, the easier it becomes.
(ii) Notes should be easier for the student to re-read than the book itself, as they will be shorter and in his own familiar style.
(iii) Once formal education is finished, the student often have to use documents or other books, so note taking is a useful transferable skill.
(iv) The student usually needs to acquire specific information from a book, and his notes will select and summarize what is important to him.

Meanwhile, the teacher also elaborates the benefits of Buzan Mind Mapping to the students. According to Tee *et al.* (2010), there are many benefits of using Buzan Mind Mapping in note-taking (Figure 1). Buzan Mind Mapping technique allows the students to prepare notes from textbooks. At the same time, the principles of Buzan Mind Mapping are easy and interesting to follow. Buzan Mind Mapping is also economical and encourages the use of the left and right brain. Besides that, the Buzan Mind Mapping technique is fun and effective for note-taking (Doss *et al.,* 2010;

Caviglioli *et al.,* 2002). In addition, students are able to memorize better and plan their daily activities with the help of Buzan Mind Mapping. Students will appreciate their own products (Buzan mind maps) and at the same time their creativity could be improved (Tee *et al.,* 2010). Parents and teachers are also able to monitor the student's performance.



(Tee, 2009)

Figure 1 The benefits of Buzan Mind Mapping on note taking

PURPOSE OF THE RESEARCH

This research is part of a larger study that focuses on the effectiveness of the Buzan Mind Mapping technique for technical students. Thus, the purpose of this research was to evaluate the qualities of the Buzan Mind Mapping module. A good quality of a module must be assured before the user uses it. In this case, the evaluation by the experts would reveal the qualities of the self-developed module. Meanwhile, necessary amendments or improvement need to be aligned before publishing and distributing the module to the students. To be more specific, the research objective for this research was to evaluate the qualities of the Buzan Mind Mapping module.

METHODOLOGY

This is a quantitative approach research with the purpose of assessing the qualities of the Buzan Mind Mapping module developed based on the Meyer Model (1988). Evaluators were given two months to evaluate the qualities of the self-developed module. Responses such as "Very Satisfactory", "Satisfactory", "Unsatisfactory" and "Very Unsatisfactory" were rated by the evaluators.

Research Instrument

The qualities of the Buzan Mind Mapping module was evaluated using a set of instrument, the *Rating scale for the evaluation of the qualities of a module* developed by Meyer (1988). This instrument was adopted in this research. The instrument covers two major aspects, content and design for a module with 34 items. The quality of each aspect was analyzed based on the agreement between raters. Major amendments are needed when a majority of the raters responded "Unsatisfactory" or "Very Unsatisfactory" for a particular item in the instrument.

Participants

Based on Table 1, eight evaluators (experts) were selected in this research based on their expertise by using the purposive sampling method. The experts in subject matter were needed to verify and evaluate the subject content, the thinking skills experts were needed to assure that the Buzan Mind Mapping technique was correctly delivered in the module, and the linguistic expert was needed to affirm that the language used in the module was easily understood by the users.

Table 1 Evaluators and their expertise

Designation	Number	Field of expertise
Professor	1	Subject matter
Associate Professor	2	Thinking skills (1) Module design (1)
Senior lecturer	4	Thinking skills (1) Thinking skills and linguistic (1) Subject matter (2)
Lecturer	1	Subject matter

Reliability

According to Wood (2007), the Kappa coefficient with the value 0 indicates agreement due to chance alone and 1 indicates perfect agreement. If the Kappa coefficient is .70 or greater, the rater pairs can be said to exhibit greater reliability; if less than .70, then the rater pairs may be said to exhibit lesser reliability (Landis and Koch, 1977). Fleiss's Kappa was used to identify the value of inter-rater reliability for the Rating Scale for The Evaluation of The Qualities of A Module instrument because the evaluating process only involved three raters. Fleiss's Kappa for the inter-rater reliability score for the instrument was $\kappa = .7167$, S.E. = .0990, 95% C.I. = .5226 to .9107, which can be taken to represent constant agreement among three raters.

DESIGN AND DEVELOPMENT OF THE MODULE

The Meyer Model that comprises 12 main steps (Figure 2) was referred to as the main source in designing and developing the Buzan Mind Mapping module.

The Fundamental Characteristics of Modules

Based on Meyer (1988), modules meet the conditions necessary for effective learning. This occurs because modules have certain fundamental design characteristics which have emerged through the application of ideas from the theory of learning. Among the characteristics are the module is essentially self-contained, is self-instructional, concerns individual differences, provides clear statements of objectives, emphasizes optimal association, sequence and structure of knowledge, utilizes a variety of media and methods, provides information on progress (feedback), gives immediate reinforcement of responses, encourages active participation of the learners, and promotes mastery evaluation strategy in the learning process.

The Components of a Module

Most modules are designed on similar principles (Meyer, 1988). The major components of a module are such as the instructions on how to use the module, statement of purpose and aim, list of pre-requisite skills, list of instructional objectives expressed in performance terms, diagnostic pretest, list of equipment and other resources required, sequenced instructional activities, and mastery post test.

Steps in the Design and Development of a Module

The need for precision in designing a module is crucial. Modules are self-paced and self-instructional, therefore based on the design of the Meyer Model, instructions to the user and the sequence of learning must be very clear. There are two criteria that demand precision in the design (Meyer, 1988). Firstly, the module must be designed to ensure that the learning outcomes will be achieved because each module precisely prescribes expected learning outcomes. Secondly, one "false step" in the design will break the continuity of learning and the module fails. In other words, the learning steps in a module follow logical learning hierarchies. If one vital step is omitted from a chain of logical reasoning or in progressing from a lower to higher level orders of knowledge then the learner is unable to proceed without intervention by a teacher. The design of step by step sequence must be fail-safe to ensure that the module is effective for the user to work on his own pace.

Figure 2 shows the steps in the design and development of a module. There are 12 main steps in developing the Buzan Mind Mapping Module based on the Meyer Model. A needs analysis was conducted on 384 secondary school teachers in Malaysia to identify the needs on learning the Buzan Mind Mapping techniques for secondary school students. The results revealed that a majority of the teachers agreed that students needed to learn note taking techniques for their subjects. The module format was

fully based on the Meyer Model that consists of the input-process-output cycle. The characteristics of the users were identified and the objectives were made based on the results of the discussion among experts and teachers.

Criterion measures were set to assure that the learning outcomes were assessable. Some of the proposed content was removed based on incompatibility issues. The major content of the module was the Buzan Mind Mapping technique that consisted of steps for note taking and methods on assessing the mind maps. Appropriate instructional activities such as sketching, answering short questions and mind mapping were included in the module to optimize the user's participation. A prototype was developed and assessed by evaluators before distributed to the target group users.

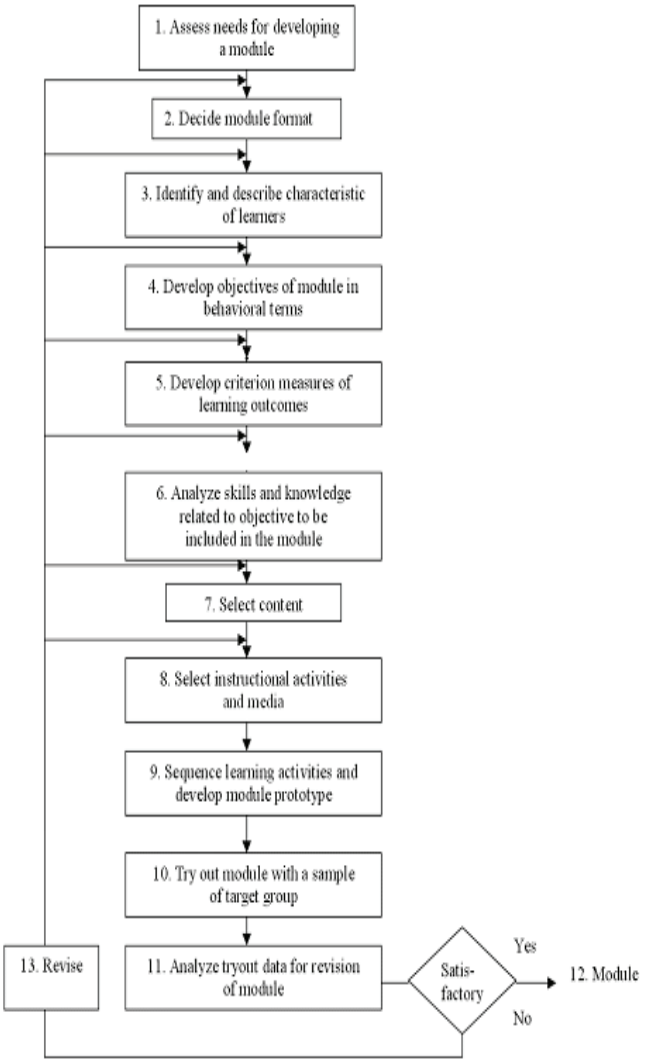
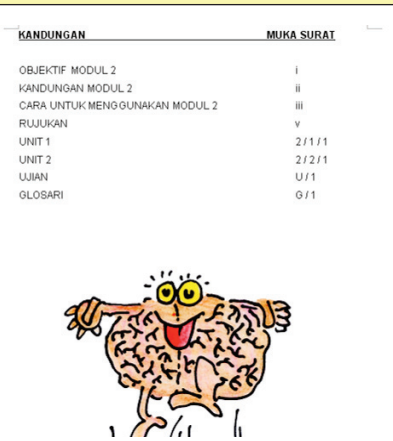
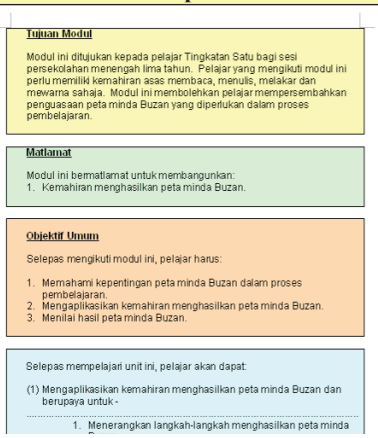


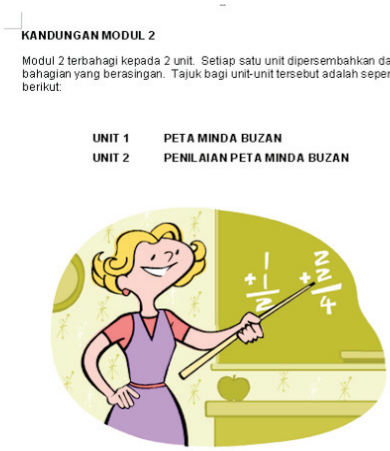
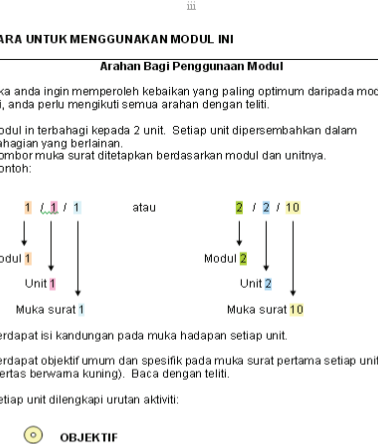
Figure 2 Meyer Model (Steps in design and development of a module)

CONTENT OF THE MODULE

The content of the Buzan Mind Mapping module included the overall content, purpose of the module that emphasized on the general and specific objectives to be achieved at the end of the module, unit content, instructions on how to use the module, and references. Each unit had a cover design, content, objectives, input, tasks and interpretation on the task's responses. A summative test and glossary were attached at the end of the module.

Generally, there were two units in the Buzan Mind Mapping module, Unit 1 and Unit 2. The first unit included samples of the Buzan mind maps, the importance of Buzan Mind Mapping, frequently asked questions on Buzan Mind Mapping, laws of Buzan Mind Mapping and, most importantly, the detailed steps on the Buzan Mind Mapping technique for note taking. The second unit explained the 7 main criteria for assessing a mind map. A rubric was attached in the unit as a reference for the user to assess one's mind map. Examples on how to assess mind maps were also given in the module.

Overall Content	Purpose
	

Unit Content	How to use the module
	

References

RUJUKAN

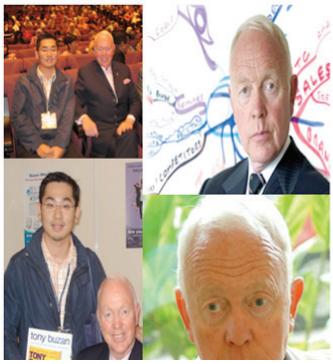
Anda berkemungkinan ingin mendapatkan maklumat tambahan supaya lebih menguasai modul ini. Berikut merupakan senarai rujukan di laman web yang mampu membantu anda memperoleh maklumat berkaitan.

Peta minda Buzan

http://www.mind-map.com/
http://buzanmalaysia.com/
http://www.mind-mapping.co.uk/
http://berita-harian-online.com/peta-minda-tony-buzan/
http://www.thethinkingbusiness.co.uk/mindmappingtonybuzan.htm
http://www.goodreads.com/author/show/4603.Tony_Buzan
http://www.youtube.com/watch?v=MlabrWv25qQ

Cover of the unit

MODUL 2
UNIT 1



Unit content

2 / 1 / 2

KANDUNGAN		MUKA SURAT
	OBJEKTIF	2 / 1 / 3
	INPUT	2 / 1 / 4
	TUGASAN	2 / 1 / 24
	MAKLUM BALAS TUGASAN	2 / 1 / 25
	INPUT	2 / 1 / 28
	TUGASAN	2 / 1 / 62
	MAKLUM BALAS TUGASAN	2 / 1 / 63

Objectives

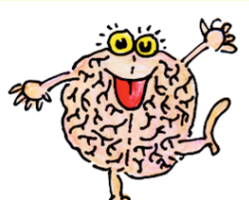
2 / 1 / 3

UNIT 1 PETA MINDA BUZAN

OBJEKTIF UMUM : Menghasilkan peta minda.

OBJEKTIF KHUSUS :
Pada akhir unit ini, anda akan berupaya:
1. Menerangkan langkah-langkah menghasilkan peta minda Buzan.
2. Mengaplikasikan kemahiran menghasilkan peta minda Buzan dalam mengambil nota buku teks.

Unit ini ialah unit **pertama** dalam modul ini.



Input

2 / 1 / 4

INPUT

PENGENALAN

Unit pertama ini akan menjelaskan dengan terperinci tentang peta minda Buzan. Anda juga akan berpeluang untuk belajar melukis peta minda Buzan langkah demi langkah. Bersedialah untuk menyelami dunia PETA MINDA BUZAN!

PETA MINDA BUZAN

Tony Buzan ialah pencipta kepada peta minda Buzan, alat berfikir yang paling berkuasa. Penciptaan peta minda Buzan bermula pada akhir 1960-an oleh Tony Buzan yang kini digunakan oleh jutaan individu di seluruh dunia. Peta minda Buzan juga dikenali sebagai "Swiss army knife for the brain" adalah satu teknik mengambil nota yang telah diguna oleh lebih daripada 250 juta individu di seluruh dunia.

Tasks

TUGASAN

Arahan:

Jawab semua soalan dan bandingkan jawapan anda dengan jawapan yang dibekalkan pada muka surat MAKLUM BALAS TUGASAN.

Ingin mencabar minda anda?

1. Senaraikan 7 langkah utama dalam penghasilan peta minda Buzan.

2. Hasilkan satu peta minda Buzan berdasarkan petikan yang diberi.

Ujian SEA sangat sesuai digunakan untuk menilai kepupayaan kemahiran berfikir aras tinggi pelajar. Pernyataan ini disokong oleh Udall dan Daniels (2006). Perbandingan dilakukan ke atas ujian-ujian berkaitan dan didapati

Interpretation on the task's responses

2. Hasilkan satu peta minda Buzan berdasarkan petikan yang diberi.

Ujian SEA (imej pusat) sangat sesuai[1] digunakan untuk menilai kepupayaan kemahiran berfikir aras tinggi pelajar. Pernyataan ini disokong oleh Udall dan Daniels (2006). Perbandingan dilakukan ke atas ujian[2]-ujian berkaitan dan didapati ujian SEA paling tepat digunakan untuk menilai kemahiran berfikir aras tinggi. Penilaian[3] ke atas Ujian SEA ini dilakukan dalam tempoh 2 tahun sebanyak 5 kali. Di samping itu, penilaian ini dilakukan oleh sekumpulan pakar dalam bidang pengukuran dan penilaian. Bentuk soalan[4] ujian SEA adalah umum dan melibatkan urusan kehidupan harian. Individu hanya perlu mempunyai kemahiran[5] membaca untuk menjawab ujian SEA ini. Ujian SEA diperolehi terus secara percuma[6].

Sekiranya peta minda Buzan yang anda hasilkan 50% tidak menyerupai jawapan, sila rujuk kembali petikan soalan dan hasilkan sebuah ...

CONTOH MENGESAN PENILAIAN SEMULA

Sila rujuk kembali pada kriteria yang berkaitan jika angka aras yang anda nilai beza 2 mata dan ke atas dengan jawapan yang diberi.

Lakukan penilaian sekali lagi ke atas kriteria tersebut.

Contoh:

KRITERIA	ARAS (Penilaian yang diberi)	ARAS (Penilaian Anda)	BEZA MATA
Imej Pusat	4	4	0
Struktur Keseluruhan	4	1	3
Imej/ Kod/ Simbol	1	2	1
Kata Kunci	2	2	0
Warna	2	1	1
Maklumat Tambahan Berkaitan	3	2	1
Penyambung Antara Idea Bagi Jejari Peta Minda Buzan (konsep "buka" dan "alir")	1	1	2

2/2/21

Merujuk kepada beza mata, anda perlu merujuk kembali pada kriteria:

- Struktur Keseluruhan dan
- Penyambung Antara Idea Bagi Jejari Peta Minda Buzan (konsep "buka" dan "alir")

Test

U / 1

UJIAN

Soalan-soalan menunggu jawapan anda!

1. Lukis pada pernyataan yang benar.

(i)	Mula di pusat sehelai kertas kosong. Kertas berada dalam keadaan mendatar "Potrait".	
(ii)	Gunakan satu imej atau gambar untuk dijadikan sebagai idea pusat.	
(iii)	Jangan gunakan warna semasa menghasilkan peta minda Buzan.	
(iv)	Sambungkan jejari utama ke imej pusat. Sambungkan sub jejari kepada jejari sebelumnya dan seterusnya.	
(v)	Pastikan jejari anda berada dalam bentuk lurus berbanding garis lengkung.	
(vi)	Gunakan satu kata kunci untuk setiap garis.	
(vii)	Gunakan imej pada setiap bahagian dari awal hingga akhir.	

2. Hasilkan satu peta minda Buzan berdasarkan kandungan teks yang diberi dan nilaikan peta minda Buzan tersebut dengan menggunakan

Glossary

GLOSARI ISTILAH

HURUF	PERKATAAN / FRASA	MAKSUD
A	Alat berfikir	Alat berfikir adalah kaedah yang digunakan untuk mempelajari kemahiran berfikir.
	Artikel	Karangan atau tulisan tentang sesuatu perkara yang disiarkan dalam akhbar dan sebagainya; makalah.
	Artis	Orang yang menghasilkan sesuatu karya seni (seperti pelukis, penyanyi, pemain muzik).
B	Berkualiti	Mempunyai kualiti, bermutu.
	Berpancaran	Keluar ke sana sini (berbagai-bagai hala); berpanoutan.
C	Cabang	Sesuatu yang berpecah.
	Cerpen	Cerita pendek.
	Corak	Rupa (bentuk, sifat) yang tertentu.
D	Diasimilasi	Pemaduan bermacam-macam jenis atau berbagai-bagai unsur menjadi satu. Menjadikan berpadu; menyerapkan ke dalam suatu kesatuan (paduan dan sebagainya) yang lebih besar.
	Diimbas	Proses mencari data dalam ingatan dengan meneliti setiap butir data sehingga data berkenaan ditemui.
	Diterokai	Memerikса sesuatu yang belum jelas; menyelidik.
	Draf	Tulisan (nota, surat, karangan, dan sebagainya) atau lukisan yang disediakan secara kasar pada peringkat awal atau pemulaan (biasanya perlu diperbaik atau dihalusi lagi.
F	Fokus	Tumpuan perhatian, perbincangan dan sebagainya.
G	Gaya	Cara, jalan, laku.
	Glosari	Senarai istilah berserta takrifnya yang disusun menurut abjad khusus bagi sesuatu bidang pengetahuan.
	Grafik	Maklumat atau paparan yang terdiri daripada

Buzan Mind Mapping technique

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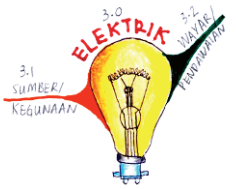
2.



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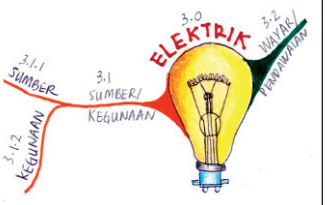

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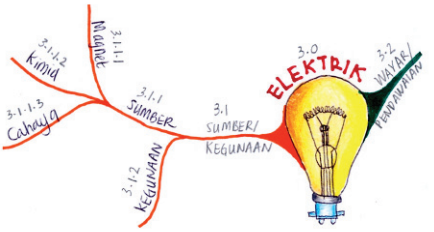

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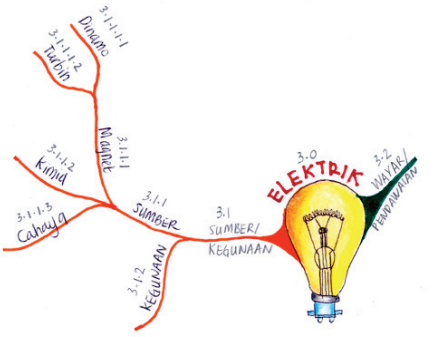

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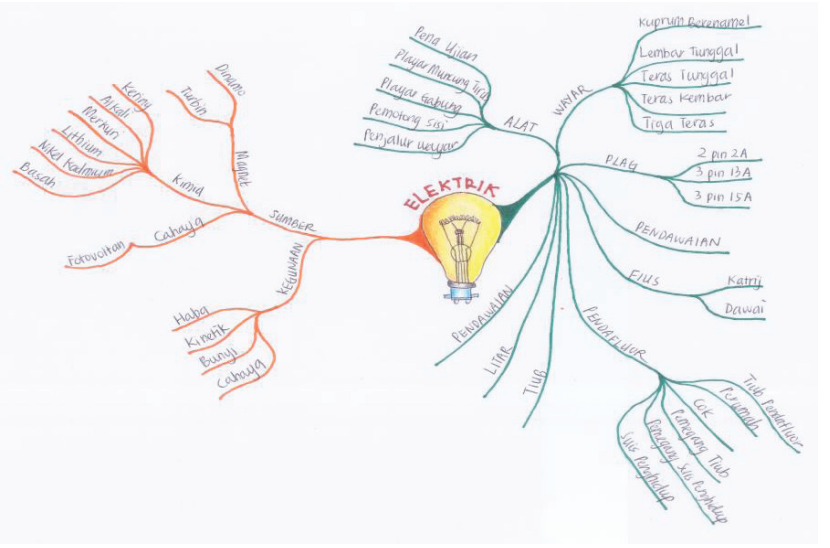

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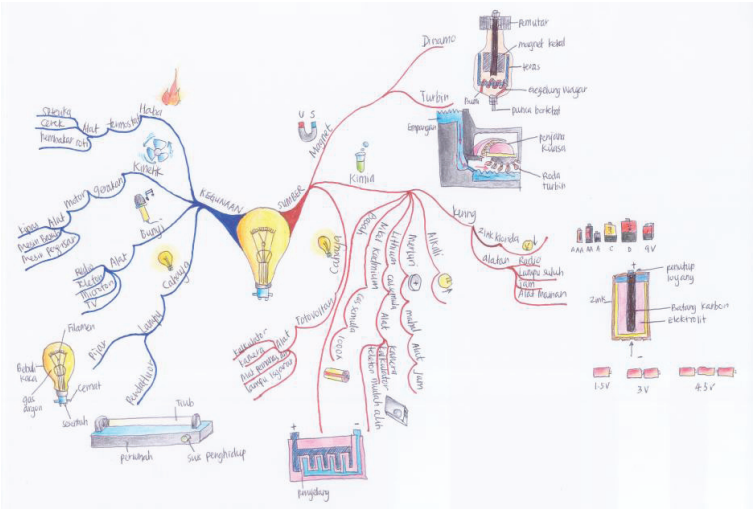
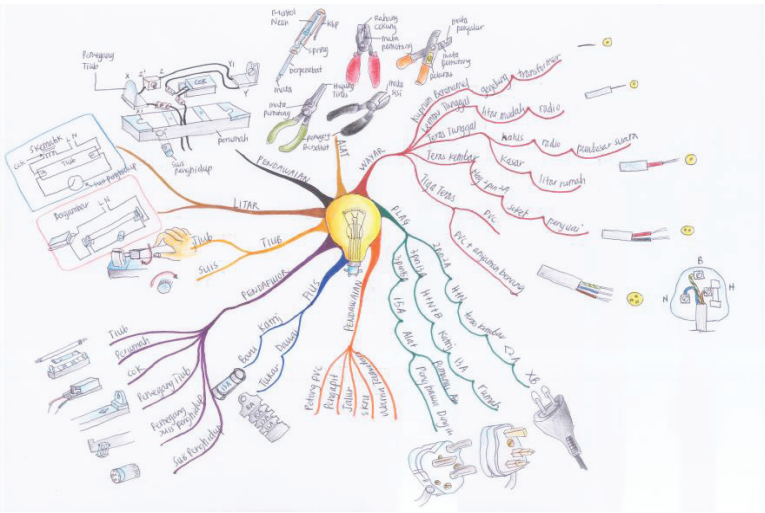


8.



FINDINGS AND DISCUSSIONS

Eight raters (content and design experts) used the instrument to rate the qualities of the Buzan Mind Mapping module. Table 2 shows an agreement at the satisfactory level and above on all the 34 items for the design and content of the module. The evaluators were satisfied with the needs and purpose of the module. On the other hand, the design of the module such as units, input-process-output cycle, reinforcement statements, visual elements, bridge passages, instructions, layout, humour, consolidations passages, overview, post test, interpretation on the feedbacks and results, motivation, length of time and integration were positively rated by the evaluators.

Meanwhile, the evaluators were also satisfied with the content aspect such as the introduction, aims, objectives, relevance of the content, logical learning sequence,

activities in the module, feedback questions and results of the post test. Based on the results, it shows that a good quality module could be produced by using the Meyer Model. Time constraint, as reported in Shaharom and Yap's (1993) study, was one of the main factors to be considered in the whole process of developing the draft module that consisted of the 12 main steps.

Table 2 Rating scale for the evaluation of the quality of the Buzan Mind Mapping module

Title:	**Buzan mind mapping module**			
QUALITY 3 = VS = Very Satisfactory 2 = S = Satisfactory 1 = U = Unsatisfactory 0 = VU = Very Unsatisfactory	**Rating**			
	VS (3)	S (2)	U (1)	VU (0)
Need	**6**	2		
Purpose	**6**	1	1	
Introduction	**6**	2		
Knowledge and skills required	**5**	3		
General aims	**5**	3		
General objectives	**5**	3		
Specific objectives	**5**	3		
Content is directly relevant	**6**	2		
Logical learning sequence	**5**	2	1	
Defined category	**5**	3		
Units	**5**	3		
Activities are appropriate	1	**6**	1	
Active participation and response	1	**7**		
Learning activity into small steps	4	**4**		
Input-process-output cycles	**5**	3		
Feedback questions and answer	4	**4**		
Feedback questions answered clearly	4	**4**		
Feedback questions interpreted	**5**	3		
Feedback statements.	**5**	3		
Reinforcement statements	3	**4**	1	
Visual elements	2	**6**		
Bridge passages	2	**6**		
Instructions	3	**5**		
Layout	2	**6**		
Humour	3	**5**		
Consolidation passages	2	**6**		
overview of all main points	**5**	3		
Post test includes at least one item for each specific objective	4	**4**		
Form and wording	4	**4**		
Post test questions answered	**5**	3		
Results of the post test interpreted	**5**	2	1	
Motivate	3	**5**		
Length of time	**5**	3		
Well integrated	4	**4**		

After the experts have evaluated the module, corrections were made upon their recommendations. Some input from the module were removed as the experts identified them as being unsuitable for the users. Meanwhile, typing errors and content ambiguity were also changed. The module developers also needed to ensure that the time allocated for the experts to go through the module was sufficient.

SUGGESTIONS

Based on the positive feedback on the qualities of the module, we recommend that the module be tested on its effectiveness (Wong and Ong, 2007; Farrand *et al*., 2002) for note taking among secondary school students. An experimental or quasi-experimental design research should be carried out to affirm the effectiveness of this module in both aspects, the design of the module and the Buzan Mind Mapping technique for note taking (Tee *et al.,* 2012). Besides that, this self-instructional module also has the potential to be converted into a teaching module or an electronic module (Meyer, 1988) to be used by educators and students.

CONCLUSION

Overall, the findings showed a positive response to the qualities of the Buzan Mind Mapping module for aspects of design and content. Generally, the self-instructional module is very useful to students. With this module, the students are able to learn the Buzan Mind Mapping technique and apply it directly for note-taking and revision. Moreover, students could learn on their own pace by using this self-instructional module. It is hoped that by having this Buzan Mind Mapping module as an alternative approach on learning note taking, it could benefit the students.

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