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Development of Malaysian Science Standard Document for Teaching Year Four Student according to Neoteric Approach Curriculum: A Concept Paper

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Abstract

Purpose*:* This paper discussed about the development of Neoteric Approach Curriculum concept and the mapping of the Science Standard Document. The objectives of study are to examine the benefits of integrated curriculum, to outline the mapping of the concept of Neoteric Approach Curriculum for Year Four and to discuss the significant of integrating Science, Health Education and Visual Art.

Methodology*:* The development of the Neoteric Approach Curriculum for Year 4 Science Standard Document was generated from the idea of subject-integration. The mapping of the integration of Science, Health Education and Visual Art are needed to originate an integrated discipline that named as *Learning Cluster of Human Development* for Year Four. This learning cluster is grouped based on the intention to improve human personal development in terms of skills development and academic knowledge.

Findings*:* The Neoteric Approach is a new and modern approach for delivering the teaching and learning process that helps to strengthen the existing Malaysian National Curriculum. Neoteric Approach Curriculum acts as a solution to the modernization of education and pedagogy to produce a holistic student in terms of balanced physically, emotionally, spiritually and intellectually, as well as to be competitive to fulfil the needs of 21st century. The theories that supported the concept of Neoteric Approach curriculum are constructivism theory by Jean Piaget and progressivism theory by John Dewey. Based on the theories, the elements that emphasized are active learning and learning by doing which allows the students to learn by actively engage in the learning process and enhanced their learning experience.

Unique contribution to theory, practice and policy*:* By having this approach, it could help to enhance the students-centred learning with integrated strategy and support active learning in classroom, cultivating students' knowledge and skills development which will benefit them in the future.

Keywords: *Neoteric Approach Curriculum, Integrated Curriculum, Holistic Student, 21st Century Skills*

1. INTRODUCTION:

Education in Malaysia continuously brings an effort in developing potential individuals who are intellectually, spiritually, emotionally, physically and socially balanced based on the educational and learning opportunities that are provided to every child and youth. The Malaysian Ministry of Education (MOE) is always striving to shape the quality of education to meet the needs of the people in the future (Quah, 2018). For example, the Malaysian curriculum was made a transformation of curriculum from KBSR (*Kurikulum Bersepadu Sekolah Rendah*) to KSSR (*Kurikulum Standard Sekolah Rendah*), which was introduced in 2011 until now, to educate students more holistically (KPM, 2013; Sabariah et al., 2015).

According to Lawrence, Lim and Haslinda (2019), the methods of teaching and learning will change and shifts significantly in the future in order to keep up with the pace of students' development, which will improve their academic knowledge and skills necessary to adapt to the 21st century era. Therefore, the shifting is in line with the wish of Malaysian Ministry of Education to produce students who are well-rounded for all the skills and are well-prepared for the future demands of the 21st century. This statement was supported by Rusdin and Ali (2019), who stated that since 2017, the Malaysian Ministry of Education (MOE) had been revising the Malaysian Standard Curriculum for Primary School Education to make 21st century learning a reality.

University Pendidikan Sultan Idris (UPSI), which recognized as a leading educational university in Malaysia, has always had an initiative for better education that pushes back on conventional learning but strives to provide student-centred learning which promotes a sustainable learning environment and active learning for students to develop excellent academic, performance and personality, be competitive and succeed in life (Kama et al., 2022). Therefore, UPSI has always dreamed of having a primary school in their own field. UPSI has always believed that *Education* should always be a process of creating new things from the new generation of learner rather than repeating what the old generations have done before (AP/SM, 2020).

Back in 2013, UPSI had the idea of setting up its own school with its own curriculum document, in order to provide better quality learning that could leading a change in the education sector in the future. Thus, an informal private school system that called "*Sekolah Makmal*" or "*Lab School*" was established where small classes were taught without having its own building yet. However, now, the dream has come true! Many initiatives that were planned in the past by the education experts at UPSI are now becoming realistic. The private school of UPSI named *Sekolah Rendah Seri Budiman* has received approval from the Malaysian Ministry of Education and will launch in March 2024.

The project to establish a private primary school that under the management of UPSI is placed under the control of the Department of Neoteric Education Initiatives Centre (NiCE). NiCE pursues the idea of becoming an exemplary model of a neoteric school for the advancement of education in Malaysia. The new UPSI's private primary school is intended to be a model for future advanced education that can introduce more innovative pedagogy, assessment and methods of learning. Before starting the school, the first step is to draw up the curriculum document for all

subjects, which can serve as guidance for learning the syllabus. This new curriculum document is reorganized and aligned based on the National Curriculum of Malaysia and will be implemented in the UPSI's private primary school later.

The aim of this paper is to discuss the concept of the Neoteric Approach Curriculum and how this approach utilizes the Integrated Curriculum model in supporting the integration of Science, Health Education and Visual Art for developing a Year Four Science Standard Document with Neoteric approach. The objectives of the paper are: (1) to examine the benefits of integrated curriculum, (2) to describe about the concept of Neoteric Approach Curriculum, (3) to discuss the alignment and mapping of the Year Four Science Standard Document with the concept of Neoteric Approach Curriculum and (4) to outline the significance of integrating of Science, Health Education and Visual Art Education for develop the Year Four Neoteric Approach Curriculum for Learning Cluster of Human Development.

In conclusion, this Neoteric Approach Curriculum Standard Document for Year Four Learning Cluster Human Development is a big goal for UPSI and NiCE in introducing the future advanced education, as it leads to a more integrated method of learning, by enhancing a more students-centred and active learning which beneficial for students to help them to explore their knowledge and, at the same time, to develop the 21st century skills needed for the future.

2. THE NATURE AND BENEFITS OF INTEGRATED CURRICULUM

Integrated curriculum is a form of education that involves the fusion of different subject areas in the academic fields (Drake & Reid, 2020). They also stated that Integrated curriculum provides a more diverse learning pathway for teachers to use to conduct a class. Integrated curriculum can be considered as an effective teaching and learning way that should be implemented in this 21st century as the students' learning was drive by the progressivism which is the hands-on learning or practical learning, which means that the learner learns from experiences in the activity (Barton, 2021).

There are different types of curriculum integration that can be used in implementing the best learning ways for the students, such as STEM education, STEAM curriculum, project-based, inquiry-based and so on (Neendoor, 2023). All those curriculum integrations have the same objective which is to helps the students to learn what they really learned, also develop skills from the activities. As stated by Singh and Rashid (2023), the integrated curriculum is a well-rounded pedagogy to teach students' growth and development, even improving their knowledge. The effectiveness of integrated curriculum also supported by Drake and Reid (2018) who said "*Integrated curriculum is effective for academic learning".*

One of the benefits of integrated curriculum is that it allows the students to explore and make connections based on what they have learned (Drake & Reid, 2020). According to Norman and Wall (2020), "*Bringing Theory into Practice*", this phrase can be explained that students' learning does not depends only on the textbooks, but, the knowledge they learned should be more empowered and enhanced as they do it practically. For example, the mathematics theory needs to

be understood more clearly by writing out the solution, or the science theory and facts need to be proved by doing the science experiments. Hence, the integrated curriculum can promote students' engagement with the learning material, as well among the students and teacher too; thus, it enhances their learning experiences (Gürkan, 2021; McPhail, 2020).

In addition, the integrated curriculum ensures deep learning where the students' learning is not surface learning but it is deeper by covering the content in such a way that allows the students to understand the topic in depth, and thus, the students can achieve better learning (Drake & Reid, 2018). Based on this deeper learning, it could promote students to explore and experience on their own, and therefore, the students are said to be the focus in the learning process (Norman & Wall, 2020). When the students learn by deep learning, it will leads them to engage in learning and create new ideas that related to previous knowledge, and therefore, the students learn to aim for understanding rather than to answer for examination only (Drake & Reid, 2020; Yashinsky, 2023).

Furthermore, integration curriculum promotes a more sustainable learning experience for students (Drake & Reid, 2020). This is because when the students have motivation to learn and focus on what they are supposed to learn during the lessons, the learning environment become active and effective (Raihana, 2020). According to Kimberly, Alissa and Irene (2019) as cited in Singh and Rashid (2023) stated that motivation boosts the students' engagement in the process of learning as they give commitment to achieve their learning. Besides that, integrated curriculum also helps in supporting the students' cognitive development and social-emotional development. The students can learn through collaboration with others students as this will helps them to enhance their learning and also trained their social skills and communicative skills.

Integrated Curriculum has three levels of integration, which are *multidisciplinary*, *interdisciplinary* and *transdisciplinary* (Drake & Reid, 2020). For a multidisciplinary curriculum, the content and assessment of each discipline are distinct but the disciplines share the same theme. Thus, the students study the same theme or topic by working on different projects for each subject, as the example shown in Figure 1 (Drake & Reid, 2020; Neendoor, 2023). Next, interdisciplinary curriculum, is kinds of like *blending* of the subjects where the disciplines remain somewhat distinct, but share the instruction and assessment in order to achieve the learning standard, the example shown in Figure 2 (Drake & Reid, 2020).

Besides that, transdisciplinary curriculum, the most integrated of all types of curricular integration models where the disciplines are interconnected and cannot be distinguished (Drake & Reid, 2020; Gürkan, 2021). In transdisciplinary learning, students study based on inquiry and come across to solve the real-life problems that are connected to the theory that was learned in class (Gürkan, 2021). Thus, a transdisciplinary curriculum does not just involve the integration of two or more subjects but also brings out a more holistic approach to students' learning (Neendoor, 2023). As stated by O'Donnell and Day (2022), the transdisciplinary learning can help the learner to analyze deep scientific problems that able to tackle the society's needs. Figure 3 shown the diagram of transdisciplinary integration curriculum.

In a nutshell, integrated curriculum has introduced as a new way of teaching and learning to promote student-centred learning and active learning. The principle of the Neoteric Approach Curriculum Standard Document that was developed was based on the idea of integrated three different subjects based on their theme and content. This is because integrated curriculum encourages students to have deeper understanding of the interconnectedness of knowledge and be active learner by engaging in the learning process.

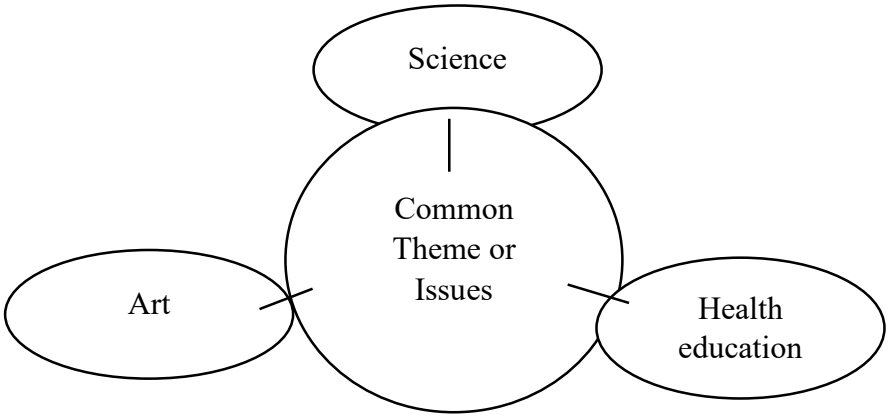

Figure 1 Multidisciplinary integration curriculum

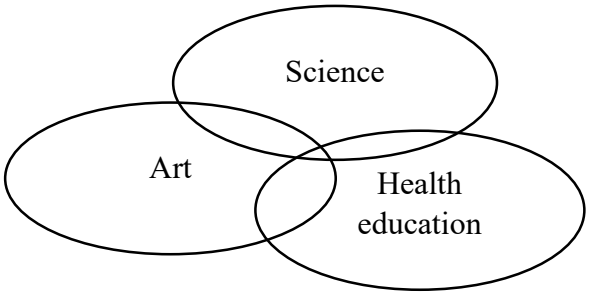

Figure 2 Interdisciplinary integration curriculum

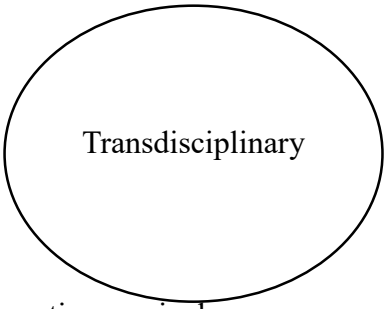

Figure 3 Transdisciplinary integration curriculum

3. CONCEPT OF NEOTERIC APPROACH CURRICULUM

The term "Neoteric" means new, modern and up-to-date (Merriam Webster Dictionary). Neoteric approach is a new approach of delivering the teaching and learning process that helps to strengthen the existing Malaysian National Curriculum (Kama et al., 2022; NiCE, 2022). UPSI established this Neoteric Approach Curriculum for several reasons. First, UPSI wants to produce a more

advanced leading education method that brings better quality of education and learning (NiCE, 2022). Furthermore, the idea of Neoteric Approach Curriculum was set as opportunity to improve the Malaysian National Curriculum (AP/SM, 2020), such as:

- Measuring Students' skills
- Improve the Assessment system
- Enhance Teachers' Creativity Pedagogy
- Enhance students' learning
- Parents involvement

The design of the Neoteric Approach Curriculum is based on the *Integrated Curriculum Model*, as the disciplines are integrated together based on the same theme. Thus, the teaching and learning activities, the learning objectives and the assessment will be delivered to the class by integration learning approach with active learning strategy. At this point, the students' engagement and students' experiences in the learning process is very important because it can help in student's growth and development (AP/SM, 2020).

3.1 Theories in Neoteric Approach Curriculum

Neoteric Approach Curriculum that has been designed by the experts in education fields under the Department of Neoteric Education Initiatives Centre (NiCE) from *Universiti Pendidikan Sultan Idris* (UPSI) was desired to produce students who adopting in the new way of learning where their learning process is self-exploration and experiential. Theoretically, the design and development of neoteric approach curriculum are based on constructivism and progressivism as the inputs of the learning theory in integrated curriculum.

Constructivism theory is a learning theory by Jean Piaget (1977), which supports students to construct knowledge from their previous knowledge and experiences (Bada & Olusegun, 2016) and thus, active learning is needed in conducting a constructivism lesson because the students have to actively participant in the lesson for constructing new information (McLeod, 2019). The theory of constructivism is applied in student-centred teaching strategies because this type of learning will help students to develop collaboration skills, critical thinking skills and thus learning will take place where the students have participated actively in the lessons.

According to Dacholfany et al. (2022), students have to construct by connecting the existing knowledge to the new knowledge since the existing knowledge is already stored in the brain. Thus, understanding can only occur within the human brain. They also stated Constructivism is essential and valuable be the approach for the social learning, this is because the learning process will be "happening" when there is a social relationship with classmates, teachers, and even family members (Dacholfany et al., 2022).

In addition, another learning theory that supports the concept of Neoteric Approach Curriculum which invented by *Universiti Pendidikan Sultan Idris* (UPSI) is progressivism theory

by Dewey (1988). John Dewey is a pragmatist who believed that human beings learn through a "hands-on" approach, which means learning by doing (Thomson, 2012). He mentioned that education must be experienced by the learners that are practical for their life and reality so that the learning process will be meaningful (Dewey, 1980 as cited in Pavlis & Gkiosos, 2017). John Dewey also claimed that the best learning method is engaged with inquiry that could promote human interests and be active to learn rather than being a passive receiver (Talebi, 2015).

For the subjects of Science, Health education and Visual Arts, all involves practical and hands-doing where the students will learn-by-doing and experiences it from learning process. For example, Science, the students need to do experiments to understand the facts, Health education requires students to explore and experience the knowledge based on real life and Visual Arts also requires hands-on which enable students to create and make the artworks to ensure the students learned what they supposed to learn or express their understanding by the artworks. Therefore, theory of Learning-by-Doing, is a "hands-on" approach can help students to grasp the knowledge, understand the content and gain the practical experience or valuable soft skills from the activities. For Dewey, education is not only about gaining theoretical knowledge but also getting practical experience, whereby the students are encouraged to learn actively and combine their theoretical knowledge with practical experience in order to have a meaningful learning experience.

4. DEVELOPMENT OF MALAYSIAN SCIENCE STANDARD DOCUMENT (YEAR FOUR) WITH NEOTERIC APPROACH CURRICULUM

Neoteric Approach Curriculum Standard Document is a listing document that contain the learning contents, activities and assessment that will be conducted for *Universiti Pendidikan Sultan Idris* (UPSI) in the future. The document of Malaysian Year Four Science Neoteric Approach Curriculum Standard was structed and developed based on the existing Malaysian National Curriculum under Ministry of Education Malaysia (MOE). The researcher referred to the Standard Document of National Curriculum to design and develop a new, improved Neoteric Approach Curriculum Standard Document that introduced by UPSI.

This Year Four Science Neoteric Approach Curriculum Standard Document aims to provide a clear guideline for the teachers to teach in the future private primary school in UPSI. By having this guideline, teachers will able to potentially equipping the students with lessons that are fun, interesting, effective and experiential. The Neoteric Approach Curriculum Standard Document is believed able to help to implement the integrated learning and learning-by-doing where the students are prepared to learn from hands-on activities and at the same time, they are able to experience something during the learning process.

In this Year Four Science Neoteric Approach Curriculum Standard Document, there is integration of three different subjects, which are Science, Health Education and Visual Arts under the National KSSR syllabus. These three subjects are integrated and become a discipline that named as *Learning Cluster of Human Development* for Year Four. This learning cluster is grouped based on the idea of subject-integration, where this can be explained by integration of Science, Health education and Visual Arts are the subject that related to human development and these subjects

intend to improve human personal development in terms of skills development and academic knowledge.

Besides that, in the project of development of Neoteric Approach Curriculum Science Standard Document for Year Four have applied the concept of students-centred learning and active learning which supported by the theory of Constructivism and Progressivism. This can be explained that UPSI's future private primary school is concentrated on students' development where the students able to explore and obtain knowledge based on their own experiences. The students should be involved in the learning process as engage in the activities or doing some practical. The learners need to be active, and causing the learning process to be active, and thus, active learning will happen. According to Leow et al. (2021), active learning is believed to be a significant approach for improving Malaysian education development, where it increased students' participants in the learning process. Hence, student-centred learning and active learning are the strategies of learning that should be implemented in education nowadays.

The outcome of the Neoteric Approach Curriculum is to produce holistic students who able to obtain knowledge by self-exploration and experiences, as well as developed the 21st century skills. According to Dubey and Dubey (2020), fundamental of learning means where the students engage in learning and be the active learner in order to achieve the Content Standards or Learning objectives during and after the process of learning. Hence, the students will have a better learning experience and leads them to have deeper and better understanding about the topic and contents. The summary of the concept of Development of Neoteric Approach Curriculum Standard Document for Year Four Learning Cluster of Human Development shows in Figure 4.

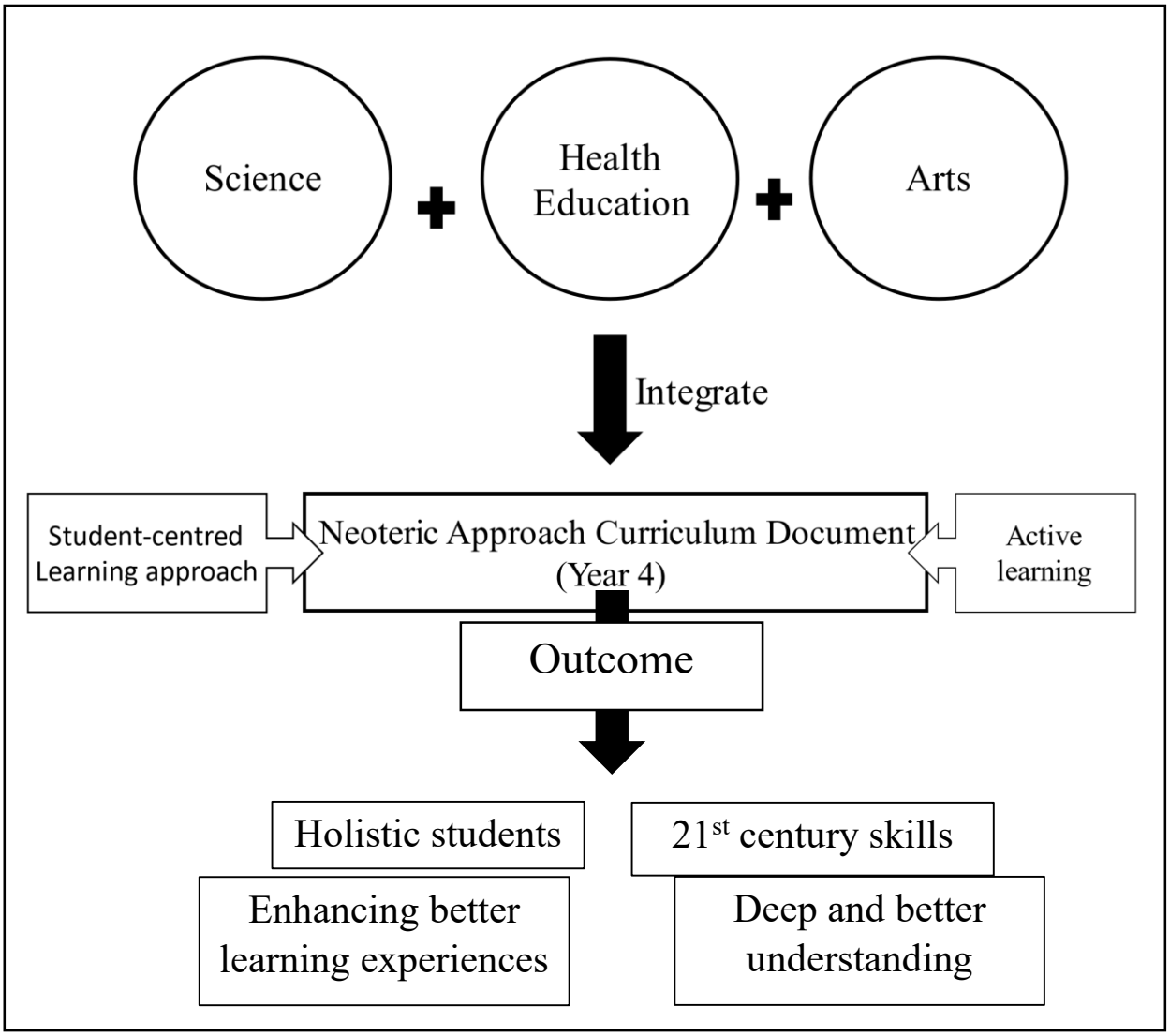

Figure 4 Concepts of Development of Neoteric Approach Curriculum Standard Document

5. DIFFERENCES BETWEEN MALAYSIA NATIONAL CURRICULUM (DSKP) AND UPSI'S NEOTERIC APPROACH CURRICULUM STANDARD DOCUMENT (DSKPN)

Originally, in the Year Four Malaysia National Curriculum (or named it as KSSR-DSKP), there are six themes and a total of ten topics in the Science education, three themes and nine topics in Health education and four module content in the Visual Arts education, as shown in Table 1. All these three disciplines are then combined to form a new curriculum that have integrated all three's learning standard and their content to be taught in a lesson according to related theme and topics, and become a newly developed Neoteric Approach Curriculum Year 4 Science Standard Document that will be used in the UPSI's private school in the future.

Table 1 Listing of themes and topics in the Malaysian National Curriculum (DSKP) for Science, Health education and Visual Arts Year 4

Science (Year 4)	
Themes:	**Topics:**
1) Inquiry in Science	**Topic 1: Scientific Skills** 1.1 Science Process Skills
2) Life Science	**Topic 2: Human** 2.1 Breathing Process-- 2.2 Excretion and Defecation 2.3 Humans Respond to Stimuli **Topic 3: Animal** 3.1 Breathing Organs of Animals 3.2 Vertebrates **Topic 4: Plant** 4.1 Plants respond to stimuli 4.2 Photosynthesis
3) Physical Science	**Topic 5: Properties of Light** 5.1 Light Travels in a Straight Line 5.2 Reflection of Light 5.3 Refraction of Light **Topic 6: Sound** 6.1 Sound **Topic 7: Energy** 7.1 Sources and Forms of Energy 7.2 Renewable and Non-renewable Energy Sources
4) Material Science	**Topic 8: Material** 8.1 Basic Sources of Materials 8.2 Properties of Materials
5) Earth and Space	**Topic 9: Earth** 9.1 Gravity of Earth 9.2 Rotation and Revolution of Earth
6) Technology and Sustainability of Life	**Topic 10: Machines** 10.1 Lever 10.2 Simple Machines and Complex Machines

Health Education (Year 4)	
Themes:	**Topics:**
1) Reproductive and Social Health Education (*Pendidikan Kesihatan Reproduktif dan Sosial*) (PEERS)	**Topic 1: (*Kesihatan Diri Dan Reproduktif*)** 1.1 Puberty (*Akil baligh*) **Topic 2*:* Substance Abuse (*Penyalahgunaan Bahan*)** 2.1 Against alcohol (Menangani alkohol) **Topic 3: Mental And Emotional Management (*Pengurusan Mental Dan Emosi*)** **Topic 4: Family (*Kekeluargaan*)** **Topic 5: Relationships (*Perhubungan*)** 5.1 Build healthy relationships with others **Topic 6: Disease (*Penyakit*)** **Topic 7: Safety Awareness (*Keselamatan*)** 7.1 Child care (*Pengantunan kanak-kanak*)
2) *Pemakanan*	**Topic 8: Nutrition (*Pemakanan*)** 8.1 Malaysian Food Pyramid and Selection of healthy food (*Piramid Makanan Malaysia dan Pemilihan makanan sihat*)
3) *Pertolongan Cemas*	**Topic 9: First Aid (*Pertolongan Cemas*)** 9.1 Bruises and Sprained (*Lebam dan Terseliuh*)
Visual Arts (Year 4)	
Modules:	1.0 Visual Arts Language (*Bahasa Seni Visual*) 2.0 Visual Arts Skills (*Kemahiran Seni Visual*) 3.0 Visual Arts Creativity and Innovation (*Kreativiti dan Inovasi Seni Visual*) 4.0 Visual Arts Appreciation (*Apresiasi Seni Visual*)

However, for the Year Four Science Standard Document of Neoteric Approach Curriculum (DSKPN) consists of a total of six themes, 16 topics and 27 units of the topics in the, shown in Table 2. The six themes are: (a) *Personal*, (b) *Family*, (c) *School*, (d) *Community*, (e) *National* and (f) *World*, while each theme contains different amounts of topics, as shown in Table 1. Each of

topics was classified based on its relevancy to the suitable theme that relate to its learning content which extracted from the National Curriculum Standard Document. However, due to the confidential issues, the interface and details of each topic in the Year Four Neoteric Approach Curriculum Science Standard Document are not showing in this paper.

Table 2 Summary of total number of topics and units for each theme

Theme	Total of topics	Amounts of Units included
1) Personal	4	7
2) Family	1	1
3) School	1	1
4) Community	1	1
5) National	1	1
6) World	8	16

As mentioned earlier, the Year Four Science Standard Document of Neoteric Approach Curriculum is produced by integrating three subjects which are Science, Health education and Visual arts together to become one discipline that named as *Learning Cluster Human Development*, as shown in Figure 5. Next, the front cover of the standard document of Malaysian National Curriculum for Science (Figure 6), Health education (Figure 7) and Visual Arts (Figure 8) are shown as below. Figure 9(a) and 9(b) presented the different version of the National Curriculum standard document for Year 4 science and its components inside, such as “content standard”, “learning standard”, “performance standard” and six levels of assessment.

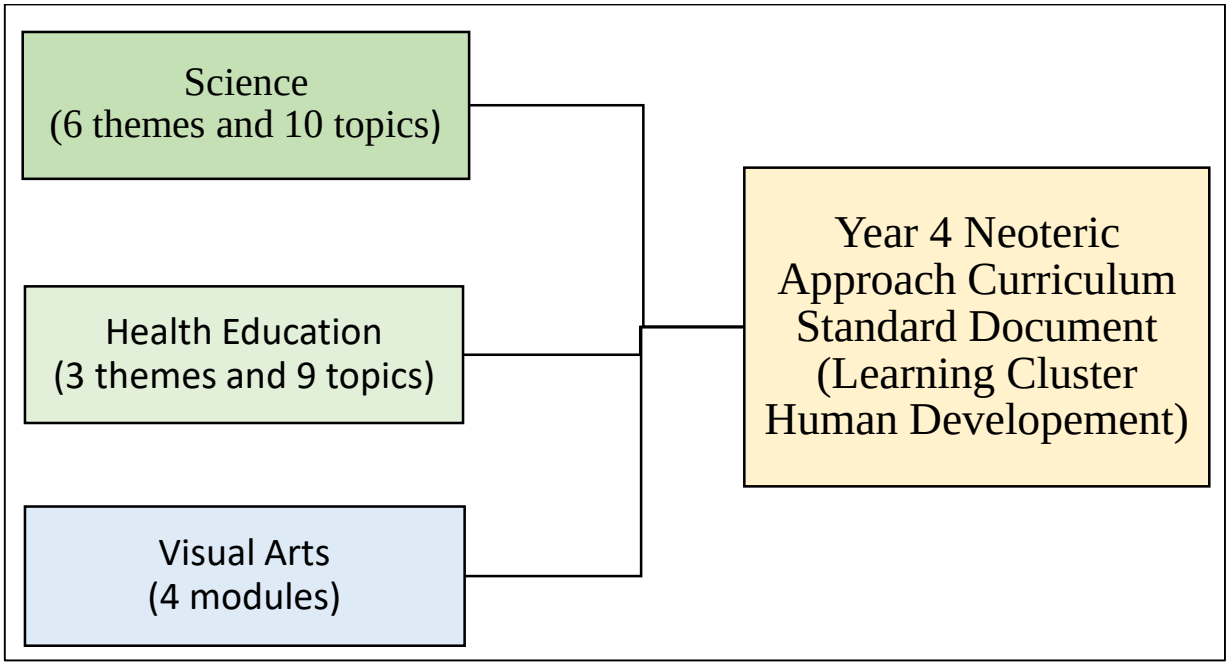

Figure 5 Mapping of Neoteric Approach Curriculum Standard Document Year 4 Science

Figure 6 Front cover of Year 4 Science National Curriculum Standard Document

Figure 7 Front cover of Year 4 Health Education National Curriculum Standard Document

Figure 8 Front cover of Year 4 Visual Arts National Curriculum Standard Document

CONTENT STANDARD	LEARNING STANDARD	PERFORMANCE STANDARD		REMARKS
		PERFORMANCE LEVEL	DESCRIPTOR	
2.2 Excretion and Defecation	Pupils are able to: 2.2.1 State the meaning of excretion and defecation. 2.2.2 Identify the organs and products of excretion. 2.2.3 Make inferences on the importance to rid products of excretion and defecation. 2.2.4 Explain the observations on human excretion and defecation through written or verbal forms, sketches or ICT in a creative way.	1	State the meaning of defecation.	Notes: Organs and products of excretion are: (i) Kidneys excrete urine. (ii) Skin excretes sweat. (iii) Lungs release carbon dioxide and water vapour.
		2	List the products of excretion and defecation.	
		3	Describe excretion and defecation.	
		4	Match the organs with the products of excretion using graphic organisers.	
		5	Provide reasoning on the importance of excretion and defecation in human.	
		6	Communicate creatively and innovatively good practices to ensure excretion and defecation are not disrupted.	

Figure 9(a) English Version of Year 4 Science National Curriculum Standard Document

STANDARD KANDUNGAN	STANDARD PEMBELAJARAN	STANDARD PRESTASI		CATATAN
		TAHAP PENGUASAAN	TAFSIRAN	
2.2 Perkumuhan dan Penyahtinjaan	Murid boleh: 2.2.1 Menyatakan maksud perkumuhan dan penyahtinjaan. 2.2.2 Mengenal pasti organ dan hasil bagi perkumuhan. 2.2.3 Membuat inferens kepentingan penyingkiran hasil perkumuhan dan hasil penyahtinjaan. 2.2.4 Menjelaskan pemerhatian tentang perkumuhan dan penyahtinjaan manusia melalui lakaran, TMK, penulisan atau lisan secara kreatif.	1	Menyatakan maksud penyahtinjaan.	Nota: Organ dan hasil perkumuhan iaitu: (i) Ginjal menyingkirkan air kencing. (ii) Kulit merembeskan peluh. (iii) Peparu membebaskan gas karbon dioksida dan wap air.
		2	Menyenaraikan hasil perkumuhan dan penyahtinjaan.	
		3	Memerihalkan perkumuhan dan penyahtinjaan.	
		4	Memadankan organ perkumuhan dengan hasilnya melalui pengurusan grafik.	
		5	Menaakul kepentingan manusia menjalani perkumuhan dan penyahtinjaan.	
		6	Berkomunikasi secara kreatif dan inovatif tentang amalan baik untuk memastikan perkumuhan dan penyahtinjaan tidak terganggu.	

Figure 9(b) *Bahasa Malaysia* Version of Year 4 Science National Curriculum Standard

Document

Figure 10 below shows how the Neoteric Approach Curriculum has improved the Malaysian National Curriculum by adding some criteria that contribute to the development and improvement of the document. In the Neoteric Approach Curriculum Standard Document template, the elements that included are: "Performance Objectives", "Learning Instructions", "Technology-Integration", "Parental Involvement", "Learning activities", learning tools" and "Assessment and Soft Skills".

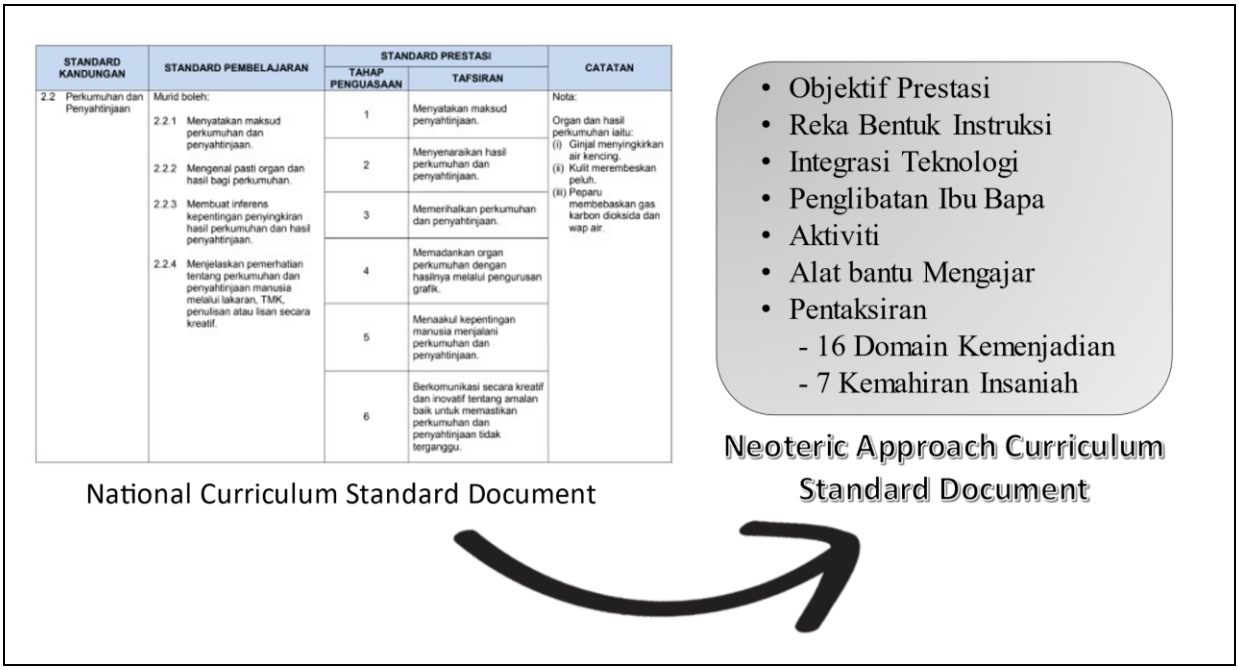

Figure 10 Comparison of components in the Standard Document between National Curriculum and Neoteric Approach Curriculum

Based on the figure above, the Neoteric Approach Curriculum included those elements as mentioned above are focusing on students' development in term of self-exploring knowledge and skills (Aidid, Abu, A'fiffa & Suhailah, 2020). As this Neoteric Approach Curriculum is aiming to enhance the students' performances, skills, assessment outcome with the support of student-centered learning method and the parental involvement; and thus, the parents will able to know their children development and assessment results each time after the class as well as their learning reports (Aidid et al., 2020). By having all these components, the Year Four Science Standard Document of Neoteric Approach Curriculum is wishing to be the leading example for primary education in terms of fun and self-exploring learning.

6. THE REASON OF INTEGRATING SCIENCE, HEALTH EDUCATION AND VISUAL ART EDUCATION INTO A DISCIPLINE

As mentioned earlier, in this project, the NiCE department would like to develop a Learning Document that integrates Science, Health Education and Visual Arts to become one new discipline

for UPSI private primary school. Thus, integrating Science, Health Education and Visual Arts into a complete discipline is significant for human development (AP/SM, 2020; Darling-Hammond et al., 2019). This is because these three subjects have shared some standard criteria, which involve human activities that prompt creative thinking (Usmeldi & Amini, 2019; Starko, 2022) and observation skills (Stivaktakis & Krevetzakis, 2018; He et al., 2019).

According to Endacott et al. (2023), human activities will lead the learner to have inquiry that will trigger an action. This statement can explain that when the students are curious and interested about something, they will motivate themselves to learn by exploring in order to get the knowledge and understand it deeply (Aslan et al., 2021). In other words, curiosity drives a response to be stimulated in the external environment and triggers active engagement in learning within the students (Aslan et al., 2021). Therefore, for the subject of Science, Health Education and Visual Arts are linked closely to a sense of inquiry; and due to the curiosity and interest, an action will be carried out for them to obtain the knowledges; and thus the students able to experience the learning process and results by their own exploring on the education journey, as shown in Figure 11.

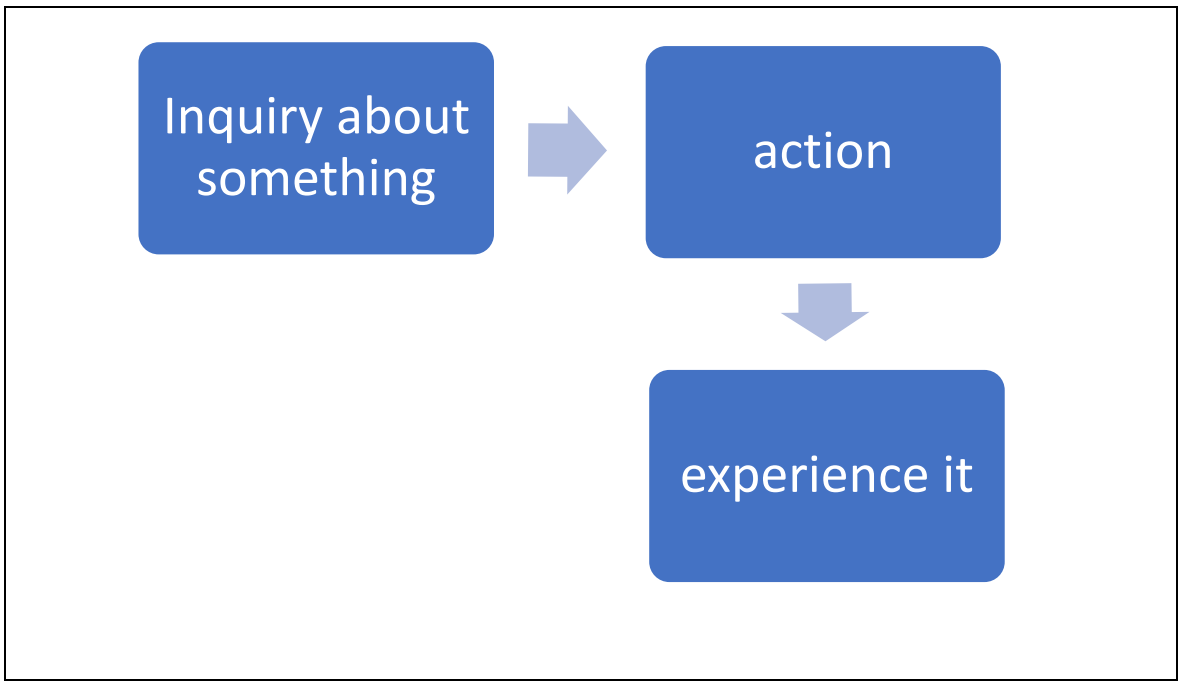

Figure 11 Mapping of the process of student's motivated to learn

According to Dewey (1859-1952) who was a philosopher, psychologist, and educational reformer, stated that learning should be achieved through practical and experience. His pragmatism theory shows education process happens when the students learn-by-doing (ÖZKAN, 2020). Therefore, the subject of Science, Health Education and Visual Arts are relevant for the students to do some hands-on activities while learning. Thus, the students' active action is crucial to obtain the information and knowledge-to-be-learned as a happening process (Thomassen & Jørgensen, 2020). In order to carry out the hands-on activities, the creative process happens. At the same time, observation of objects or a demonstration occurs, causing the students to express what they see,

learn, understand by making or creating their artworks. Thus, by *Doing It*, the students will get to know the happenings and experiences it by themselves about the "things" they are learning.

In addition, integrated arts with Science and Health Education also helps enhance the students' engagement in their learning process (McKay & McKenzie, 2018; National Academies Press (US), 2018). This is because there is a positive relationship between these three subjects, which helps the students to have better learning and provides them with a sustainable learning and development (AP/SM, 2020). This is aligned to the aim of the Neoteric Approach Curriculum where to support and encourage the students' involvement in the learning process so they are not to be left behind.

As mentioned by Liu and Gao (2019), students' engagement influences students' learning process, where the teachers can measure the students' learning experiences and achievement based on how active and engaged they are. Hence, when the students actively involve and contribute to the learning process, it helps in cultivating the students to have motivation to learn (Haw, Sharif & Han, 2022). According to Zhang (2022), motivation drives people's action to achieve something they wanted to know; therefore, motivation provide goal-oriented and sustainable learning which promoting the students' engagement in achieving their academic.

Science is related to creativity as well as the Visual Art and Health education, as both generate creative creation and innovation that requires the student to be creative in creating new things. According to Kim and Lee (2020), creativity is an integrated capacity that includes new ideas and good values combined with the standardized basic knowledge as the output for expressing a new accomplishment. Thus, creativity originates from high intellectual ability, original and open thinking that happens in day-to-day life.

For example, during the old ways of learning, the students learned about Nutrition from the facts written in the book. However, this method should be changed to a more interesting way where the students learn about Nutrition by seeing the real objects in front of their eyes, such as fruits, vegetables and also some health supplement. At the same time, the science facts about nutrients they learned for Nutrition topic can be linked to the arts where the students can draw a menu and deliver the health information. Based on what they have learned about Nutrition, they can generate a new solution to get rid of the health problems based on the menu they created. Thus, by this activity, it shows the creative process happening in the students.

Lastly, integrating Science, Health Education and Visual Arts together, the students not only trained to think creatively, but also encourage the students to utilise their observation skills (Monahan et al., 2019; Mukunda et al., 2019). In other word, in the subject of Science, Health education and Visual Arts, observation is needed as they are linked. This is because when doing an experiment, demonstrating a simulation or drawing an image, observation is important in carrying out all those activities (Stivaktakis & Krevetzakis, 2018). For example, when a student sees mouldy bread, the student will alert with the reason why the bread is mouldy and the danger of eating it; the knowledge of health care appears at this point. Then, the student can draw what he or she observed and list down the facts of science that learned. Therefore, the graphic that presented can

be shared to others as a awareness signal about "Dangers of Spoiled food". In short, Science, Health education and Visual art education are close related fostering a personal development and also skills development for each student.

7. CONCLUSION:

Education is a process for individual to develop the knowledge and abilities that are valuable for life. Thus, the integrated curriculum model is beneficial to the Malaysian education system which aims to produce holistic students as it provides a sustainable education system for the young learners of the 21st century. For this Neoteric Approach Curriculum for the Year Four Learning Cluster Human Development, which was developed by UPSI under department of NiCE is crucial in encouraging the students' learning to be self-exploring, learning-by-doing and creating a meaningful learning experience. Thus, the development of Malaysian Year Four Science Standard Document that applies the concept of Neoteric Approach Curriculum is helpful to be used in the UPSI's private primary school for the future.

8. RECOMMENDATIONS:

By having the mapping of subject-integration of Science, Health education and Visual Art that developed a Neoteric Approach Curriculum document are recommendable to incorporate this approach into the Malaysia's national school system in the future. As this concept of learning approach is such a better way to transfer knowledge in a more advanced method of learning that integrated all the related topics and themes that allows students to engage and experience in the learning process. As a results, the students able to learn based on a single idea of context and dig into a bigger image of picture that shows all the related content and knowledge linkage to their real-life problem and experiences too. At the same time, the students can cultivate their relational skills and competence in facing their future.

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