



Sekapur Sirih Daripada Pengarah



Pada kesempatan ini, saya ingin merakamkan penghargaan dan tahniah kepada Jabatan Penyelidikan dan Inovasi Profesionalisme Keguruan (JPIPK) atas usaha gigih menerbitkan Buletin Penyelidikan ini.

Kejayaan JPIPK menghasilkan Buletin Penyelidikan ini amat bertepatan dengan keperluan IPG bagi meningkatkan penulisan ilmiah dan penerbitan dalam kalangan pensyarah. Usaha ini merupakan satu jambatan ke arah pembudayaan penulisan, khasnya yang berkaitan dengan dunia pendidikan. Selain berperanan sebagai medium untuk meningkatkan pengetahuan para pensyarah, penulisan ilmiah juga dilihat sebagai satu daripada instrumen yang berfungsi untuk menyebarkan idea-idea kreatif dan inovatif daripada para pensyarah kepada warga pendidik.

Syabas diucapkan kepada Jawatankuasa Buletin Penyelidikan dan diharapkan semoga hasil daripada penulisan buletin ini dapat dimanfaatkan oleh golongan pendidik, khususnya para pensyarah dan guru pelatih selain dapat meningkatkan pembangunan profesionalisme keguruan.

Terima kasih.

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A GOOD SINGING VOICE = A GOOD VOICE FOR TEACHING?

Mah Kok Heng

Jabatan Penyelidikan Muzik

The voice is a key resource for teachers and a teacher's most valuable asset. Common contributory factors to the development of voice problems include wrong breathing techniques and ineffective projection of the voice. Speaking for long periods, vocal strain from supervising large groups, and against loud background noise will compound to stressing the voice. The nature of the job, coupled with a frequent lack of voice training, means that teachers are at considerably greater risk than most groups of employees of experiencing vocal problems at some point in their careers. The incidence of voice injuries in the teaching profession, an important occupational health and safety issue, has not been comprehensively addressed. Roy, Merrill, Thibeault, Gray & Smith, (2004) state that teachers are less effective if they have a problem with their voice as voice problems interfere with job performance and job satisfaction.

We teach and transmit not only information, but also mood, atmosphere and emotions. How we speak and what our voice sounds like have a crucial impact on classes. Harmer (2007), recommends three issues we should think about when considering the use of the voice in the management of teaching: audibility, variety, and conservation. The teacher's voice needs to be audible in order to be effective. Audibility cannot be divorced from voice quality. To be audible, good breathing techniques and projection of the voice must be acquired. It is important for teachers to be able to vary the volume and quality of their voices. Our voices when used during singing or teaching can be varied along a number of parameters: volume (how loud or softly we speak), pace (how quickly or slowly we speak, and how we use pausing), pitch (how high or low our voice range), and modulation (how we adjust the tone of our voice to convey a mood). The most common problem associated with the conservation of the voice is a lack of knowledge of good breathing habits. In singing, breathing properly means being relaxed in the shoulders (not slumped backwards or forwards), and using the diaphragm to lower the abdomen, thus filling the lungs with air. If breath is only taken into the upper region of the lungs, the support needed to expel air will be insufficient. This will lead to constrictions in the throat that will inhibit the voice. Breathing and posture are related. If we have good posture, our breathing is easier. When our breathing is more under control, so will our voices be when we sing or speak.

Singing is the act of producing musical sounds with the voice, and augments regular speech by the use of both tonality and rhythm. In many respects, human song is a form of sustained speech and nearly anyone who is able to speak can also sing and learn to project sound so that it resonates better within their vocal tract. A major influence on vocal sound and production is the function of the larynx which people manipulate in different ways to produce different sounds. These different kinds of laryngeal function are described as different kinds of vocal registers (William, 1967). Vocal registration refers to the system of vocal registers within the voice. A register in the voice is a particular series of tones, produced in the same vibratory pattern of the vocal folds, and possessing the same quality. Registers originate in laryngeal function and the vocal folds are capable of producing several different vibratory patterns. Each of these vibratory patterns appears



within a particular range of pitches and produces certain characteristic sounds. In linguistics, a register language is a language which combines tone and vowel phonation into a single phonological system. Within speech pathology, the term vocal register has three constituent elements: a vibratory pattern of the vocal folds, a series of pitches, and a certain type of sound (McKinney & James, 1994).

McKinney & James (1994) state that vocal resonance is the process by which the basic product of phonation is enhanced in timbre and intensity by the air-filled cavities through which it passes on its way to the outside air. Various terms related to the resonance process include amplification, enrichment, enlargement, improvement, intensification, and prolongation. The main point to be drawn from these terms by a singer or speaker is that the end result of resonance should make a better sound.



There are seven areas that may be listed as possible vocal resonators. In sequence from the lowest within the body to the highest, these areas are the chest, the tracheal tree, the larynx itself, the pharynx, the oral cavity, the nasal cavity, and the sinuses. There are four physical processes involved in producing vocal sound: respiration (breath is taken), phonation (sound is initiated in the larynx), resonance (vocal resonators receive the sound and influence it), and articulation (articulators shape the sound into recognizable units). Although these four processes are often considered separately when studied, in actual practice they merge into one coordinated function. With an effective singer or speaker, one should rarely be reminded of the process involved as the mind and body are so

coordinated that one only perceives the resulting unified function.

Classroom teachers should consider the elements in singing and vocalisation that have been discussed to develop a good voice for teaching. Vocal flexibility and control of the voice are the results of experience, lots of practice, and attention to many small, but important factors that many educators may not be aware of or do not care much about.

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INOVASI!..... Pasti Boleh

Jeya Velu

Jabatan Penyelidikan dan Inovasi Profesionalisme Keguruan

Inovasi ialah satu idea, objek atau tingkahlaku yang dianggap baharu (Sylver, 2014) atau yang telah ditambah baik daripada yang sedia ada. Matlamat inovasi ialah untuk memberi nilai tambah kepada organisasi khususnya dan masyarakat umum samada dari segi produktiviti, nilai wang, nilai masa atau kecekapan sistem. Inovasi digalakan kerana ia dipercayai memberi sumbangan kepada produktiviti dan pertumbuhan ekonomi serta kesejahteraan masyarakat. Proses inovasi memerlukan individu yang berfikiran kreatif dan mempunyai keupayaan pemikiran aras tinggi kerana proses inovasi melibatkan penggunaan ilmu pengetahuan, mensintesis, dan menilai.

Pada hakikatnya pensyarah dan pelajar mempunyai pengetahuan dan kemahiran dalam bidang-bidang tertentu, malah mereka juga mempunyai potensi untuk menghasilkan inovasi dalam bidang masing-masing. Setiap individu berbeza potensinya, ada yang mudah mencetuskan idea baharu, manakala ada sebahagian individu yang sukar untuk mengeluarkan idea baharu. Menurut Rogers (2003) terdapat lima jenis ragam manusia dalam menerima sesuatu perubahan. Jenis pertama adalah jenis *innovators* (2.5% daripada populasi), kedua ialah *early adopters* (13.5%), ketiga *early majority* (34%), keempat *late majority* (34%) dan akhir sekali *laggards* (16%). Setiap jenis manusia ini memerlukan panduan atau sokongan yang berbeza tahapnya.

Jenis *innovators* boleh berdikari dan hanya perlukan sedikit sokongan dan bantuan dalam menyebarkan idea mereka. Mereka sentiasa memikirkan idea-idea baru, sangat bersemangat, suka berbual tentang idea mereka dan mempunyai visi, selain itu mereka mudah meluangkan masa, sangat bertenaga dan kreatif.

Jenis *early adopters* pula suka menunggu peluang, kesempatan dan strategi untuk melakukan perubahan. Mereka mudah dan cepat menghubungkan sesuatu inovasi dengan kepentingannya terhadap diri mereka dan masyarakat. Mereka mempunyai semangat, ada keinginan untuk mencari idea baharu dan melakukan perubahan bagi tujuan penambahbaikan kepada idea/system/proses yang sedia ada. Kumpulan ini juga memerlukan dorongan, sokongan dan sedikit panduan untuk melakukan inovasi atau melakukan perubahan.

Bagi jenis *early majority*, *late majority* dan *laggards*, mereka tidak mahu mengambil risiko dan takut pada kegagalan, serta kurang bermotivasi. Ketiga-tiga kumpulan ini memerlukan sokongan yang tinggi, motivasi, panduan dan perlu dibimbing. Ketiga-tiga kumpulan ini perlu diberi peluang dan galakkan untuk bertanding, promosikan hasil inovasi mereka, memberi pengiktirafan dan kurangkan birokrasi (*red tape*). Organisasi boleh memikirkan cara-cara yang berkesan untuk memotivasikan seperti memberi pengiktirafan, ganjaran, wujudkan budaya kreatif.



Kebelakang ini, penghasilan inovasi dalam kalangan warga IPGKIK amat digalakkan. Walaupun kebanyakan warga menyedari kepentingan inovasi, namun masih ada juga dalam kalangan warga yang kurang pasti atau kurang yakin untuk menghasilkan inovasi.

Berikut disenaraikan langkah-langkah umum yang boleh dijadikan panduan oleh individu atau kumpulan yang ingin melakukan inovasi:

Sumbangsaan. Adakan sesi sumbangsaan dan senaraikan isu-isu atau situasi yang menjadi cabaran atau penghalang kepada pencapaian matlamat pendidikan seperti objektif kursus, objektif program, objektif pengajaran atau hasil pembelajaran. Misalnya peratus pelajar yang mendapat CGPA 2.0 melebihi 25% pelajar kohort tertentu, atau 60% pelajar menunjukkan min kualiti kepimpinan kurang daripada 2.5 (Skala 1 – 5).

Tentukan fokus. Susun kesemua cabaran mengikut keutamaan berpandukan kriteria yang ditentukan bersama. Seterusnya pilih satu yang hendak difokus.

Tentukan kaedah penyelesaian. Fikirkan bersama alternative-alternatif yang ada untuk menangani cabaran yang telah dikenalpasti. Contohnya, fikirkan langkah-langkah yang boleh diambil untuk meningkatkan kualiti kepimpinan dalam kalangan pelajar. Alat-alat berfikir yang boleh membantu ialah seperti analisis kekuatan, kelemahan, peluang dan cabaran (*SWOT*) atau Strategi Lautan Biru (*Blue Ocean Strategy*). Selain daripada pengetahuan, kemahiran dalam bidang yang diceburi, idea-idea kreatif (pemikiran kreatif) ahli pasukan amat diperlukan diperingkat ini.

Rancang. Sediakan rancangan yang terperinci dari segi proses, bahan sumber, masa, kos serta sumber tenaga yang diperlukan untuk menangani cabaran tersebut. Kenalpasti apakah impak yang diharapkan daripada inovasi yang dirancang.

Perlaksanaan dan Penilaian. Laksanakan langkah-langkah yang dirancang seterusnya menilai keberkesanan idea, proses atau produk secara sistematik. Perlu pastikan ada data atau maklumat yang sahih.

Laporkan hasil inovasi dan sebarluas.

Bantuan kepakaran dalam bidang-bidang tertentu mungkin boleh diperolehi di mana-mana peringkat inovasi. Hasil inovasi perlu diuji keberkesanannya terhadap kumpulan sasaran. Semoga panduan ini dapat membantu untuk memahami dan memulakan inovasi.

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KEMAHIRAN BERFIKIR ARAS TINGGI (KBAT) DALAM PENTAKSIRAN DI INSTITUT PENDIDIKAN GURU

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Jabatan Penyelidikan dan Inovasi Profesionalisme Keguruan

Kementerian Pendidikan Malaysia (KPM) telah mengambil langkah untuk memperkenalkan Kemahiran Berfikir Aras Tinggi (KBAT) dalam Pelan Pembangunan Pendidikan Malaysia 2013-2025 (PPPM). Kementerian Pendidikan Malaysia mendefinisikan KBAT sebagai “keupayaan untuk mengaplikasikan pengetahuan, kemahiran dan nilai dalam membuat penaaakulan dan refleksi bagi menyelesaikan masalah, membuat keputusan, berinovasi dan berupaya mencipta sesuatu” (KPM, 2013a, hlm. 1). Dalam usaha mentransformasi pendidikan, KBAT harus diberi penekanan dalam proses penggubalan, pelaksanaan dan pentaksiran kurikulum. Kementerian Pendidikan Malaysia telah menyatakan hasrat KPM untuk “menambah baik kerangka pentaksiran bagi menambah jumlah soalan yang menguji kemahiran berfikir aras tinggi” (KPM, 2013b, hlm. 4-1). Selaras dengan hasrat tersebut, salah satu usaha yang telah diambil oleh Institut Pendidikan Guru (IPG), KPM dalam memupuk KBAT adalah melalui penambahbaikan pentaksiran pendidikan guru.

Newmann (1988) berpandangan bahawa KBAT merujuk kepada situasi di mana seseorang individu perlu menginterpretasi, menganalisis dan memanipulasi maklumat untuk menjawab soalan atau menyelesaikan masalah yang tidak boleh disempurnakan dengan hanya mengaplikasi pengetahuan sedia ada secara rutin. Bagi tujuan pentaksiran, Brookhart (2010) berpendapat bahawa, pentaksiran harus dilaksanakan berasaskan kepada tiga prinsip umum. Pertama, guru perlu menyatakan dengan jelas dan tepat tentang perkara yang ingin ditaksir. Kedua, guru perlu menyediakan tugas atau item ujian yang dapat memberi peluang kepada pelajar untuk mempamerkan atau mendemonstrasikan penguasaan ilmu pengetahuan dan kemahiran yang ditaksir. Ketiga, guru perlu menentukan apakah bentuk bukti yang dapat dikutip untuk menunjukkan pelajar telah menguasai pengetahuan atau kemahiran yang ditaksir. Bagi pentaksiran KBAT, Brookhart (2010) juga berpendapat bahawa terdapat tiga prinsip tambahan yang perlu diambil kira, iaitu: (a) guru perlu persembahkan sesuatu yang dapat merangsang pemikiran pelajar, biasanya rangsangan ini adalah dalam bentuk teks pengenalan, visual, bahan resos, senario atau masalah (b) guru perlu gunakan bahan yang baharu kepada pelajar, bahan tersebut mesti yang tidak pernah digunakan di dalam kelas agar dapat mengelak daripada pelajar mengingat kembali semata-mata dan, (c) guru perlu membezakan antara tahap kesukaran (mudah atau sukar) dan tahap pemikiran (ingat kembali atau pemikiran aras tinggi) serta mengawal kedua-duanya secara berasingan.



Kementerian Pendidikan Malaysia (2013a) telah mengenal pasti lima ciri penting bagi item KBAT. Pertama, item KBAT perlu menggunakan rangsangan seperti petikan, gambarajah atau graf secara meluas untuk menjana kemahiran membuat inferens dan menaakul secara kritis. Kedua, item KBAT perlu menggunakan pelbagai kata tugas untuk mentaksir pelbagai aras pemikiran dalam domain kognitif untuk memberi impak yang lebih besar. Ketiga, item KBAT perlu melibatkan konteks yang baharu atau yang tidak lazim kepada pelajar. Konteks baharu tersebut bertujuan merangsang pemikiran pelajar agar pelajar tidak sekadar menyatakan semula apa yang telah dipelajari di dalam bilik darjah. Keempat, item KBAT juga perlu mencabar pelajar menyelesaikan sesuatu masalah kehidupan sebenar dengan menggunakan pembelajaran daripada pelbagai disiplin. Kelima, item KBAT tidak harus berulang. Sebaliknya, item peperiksaan berbentuk KBAT harus dipelbagaikan setiap tahun serta melangkaui bahan dalam buku teks untuk mewujudkan situasi yang baharu kepada pelajar.

Pentaksiran di IPG harus memberi penekanan kepada KBAT dalam usaha melahirkan guru yang mempunyai kemahiran berfikir aras tinggi, kompeten dan berjiwa pendidik melalui program pembangunan guru yang dinamik ke arah pendidikan bertaraf dunia. Transformasi pentaksiran di Institut Pendidikan Guru telah bermula pada 2013 dengan berpandukan kepada kerangka pentaksiran KBAT yang dibangunkan daripada konsep dan pandangan yang telah dibincangkan di atas.

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Principles to adhere when writing assessment items or task which will help to ensure higher-order thinking are

- (i) use introductory material or allow access to resource material,
- (ii) use novel material, and
- (iii) attend separately to cognitive complexity and difficulty

Adapted from: How to Assess Higher-Order Thinking Skills in Your Classroom, Susan M. Brookhart, 2010



LANGUAGE GAMES WITH ETAS

Kalaimathy Irene George

Jabatan Pengkhususan Bahasa Inggeris

18 January 2014 was a day of excitement in the compound of an otherwise quaint school. SMK Hulu Kelang played host to eight vibrant and young enthusiastic teachers who conducted a Language Camp for students of Forms 1-5. These teachers are a part of the 100 Fullbright English Teaching Assistants (ETAs) from all over USA who are here to assist the local teachers to enhance the proficiency of the language.

Language camps help build literacy as they prepare a platform for challenging activities and subsequently provide richness in language use. In fact most of us have conducted such camps in schools and even in teaching institutes and have had good response from the students. Now, with a foreign setting, the students seem to be improving in leaps and bounds.

Students with low proficiency need guidance and encouragement which can boost them to try out new things without feeling intimidated. Most of the time, our students are shy to converse in English because they feel that others might laugh at them. So teachers need to build the confidence to create the right setting so as to encourage use of English. Rama, Ying, Lee & Luei (2004) found that students build more confidence when people around them were more relaxed; especially when the setting was permissible. Thus, a language-based camp can set the right platform.



With language games, speaking did not pose a problem or a hurdle. According to an article by Urrutia and Vega (2006), speaking is the most difficult skill to study; students are usually shy, lack vocabulary and have a fear of being humiliated. Somehow, the language camp just thrashed all these barriers.



The ETAs made such a wonderful connection with the students although they were interacting with them for the first time. Our teachers can learn a number of activities to kindle the use of English among second language learners. The young and vibrant teachers blended every activity in a fun way that was very challenging and enabled a wholesome participation. Some of the activities were Colour Wars, Bunch Words, Charade, Run Across Circles, Hit & Sit, Obstacle Course and Zip, Zap, Zam There was



never a time the students gave up under the ETAs who had carefully connected the school environment and the country's cultures in all their activities.



The scorching midday heat was not in the way at all for both parties. Cameras were clicking away fiercely as the students wanted to capture beautiful, memorable moments and experiences that would definitely be always in their minds. The ETAs had made such a deep impact on these young students and I was pretty sure that these memories would always be etched in their minds for a long time. I could just imagine the waves of excitement these ETAs are going to make in the interiors of Sabah and Sarawak. In a couple of days they would be making their way to their assigned

schools, enhancing the use of English. Together with the local teachers, it is hoped that the students will become confident English speakers which is in keeping with the objectives of the Education Blueprint (2013 - 2025), preparing students to be proficient in English for a globally competent atmosphere.

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What is a teaching assistant?

Teaching assistants (TA) work alongside school teachers, helping pupils to get the most out of their learning. They support individuals or groups of pupils, and they assist the teacher in the classroom. Some TAs specialise in literacy, numeracy, special educational needs, English as an additional language or the creative arts. The role depends on the age of the children. In a nursery or primary school, with children aged three to eleven, tasks can include:

- setting up equipment and getting things ready for lessons
- helping pupils who need extra support to complete tasks
- listening to children read, reading to them or telling stories
- helping with school activities, sports events and outings

Adapted from: <http://www.skill.org.uk/page.aspx?c=359&p=485>



MEDIATION AND MEDIATIONAL ROLE OF ENGLISH TEACHERS

Assunta Carolina Antonysamy (PhD)

Jabatan Pengkhususan Bahasa Inggeris

Lantoff and Thorne (2006) state that humans reside in two worlds: one comprised of signs and symbols, managed primarily through language, and the other of material objects, controlled primarily through our hands and brains. According to them, based on Vygotsky (1986), there are no human actions that are not mediated. They particularly expounded on Vygotsky's idea on the mediational function that language activity serves in the mental life of human beings. Their ideas are especially important in our role in mediating our ESL learners' teaching and learning of English.

According to the Vygotskian view, it is through social mediation that knowledge becomes refined and viable and gains coherence. Mediation is seen as the mechanism through which external, sociocultural activities are transformed into internal, mental functioning (Le Pham Hoai Huong, 2003). As Kozulin (1990) puts it, mediation is the instrument of cognitive change. The source of mediation can be a material tool, a system of symbols or even the behaviour of another in social interactions. Mediation can take the form of a textbook, visual material, classroom discourse, instruction or any other kinds of teacher assistance. If teaching in the ZPD is now interpreted as providing guided assistance (scaffolding) and meaningful interaction, then how it is successfully carried out in the Malaysian classrooms must be made explicit to all teacher trainees for the benefit of struggling ESL learners.

According to McMahon (1996), ZPD is defined by both the child's level of development and the form of instruction, and it can be determined by how the child seeks help, how he/she uses various aspects of his/her environment and how he/she asks questions. Many learners caught in this mismatch between their language of home and English language in the classroom face despair. They can be helped by adopting a Vygotskian perspective on learning because it does not assume that children will naturally learn on their own. Instead, it recognizes the fact that they need someone more knowledgeable who plans and guides learning. This would mean that language use in ESL classroom, where communication and assisted performance occurs, is important for constructing knowledge and cognitive development. McMahon says that learners' thinking [and understanding] will be shaped to the discourse that dominates classroom interaction. Then our ESL learners need teachers who will mediate the learning of English language because language determines the mediation of concepts and understanding.

Gibbons (2003) who based her study on Vygotsky's notion that learning originates in the social mediation provided by interactions, discusses how mediation involves communication between two different orders of discourse: (i) the current levels of learners' knowledge and L2 abilities and (ii) the broader knowledge and specialist language of the community into which the students were being apprenticed.

Her study showed how learning and language acquisition are realized through a collaborative interactional process in which learners begin to appropriate the language of interaction for their own purposes. According to her, mediation is central to the study of collaborative interactions. In fact,



Roessingh (2005) says that learners need "tight mediation" in order to make meaning, and this is the responsibility of teachers.

This is where the English teachers play an important role as mediators. According to Vygotsky (1986), the teacher in the mediational role engages in a joint effort with ESL learners mainly through interaction, to advance the learners' cognitive development and knowledge construction. Vygotsky explains that at first, the speech children hear is in external form only and it becomes the learners' private speech but eventually this private speech is internalized as inner speech. Vygotsky argues that inner speech is the final phase in the development of higher forms of human conscious activity. The speech learners hear is important which means that teacher talk and language use in the English classroom plays a very crucial role in bridging the language of instruction with the knowledge and concepts of learning English.

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Lev Vygotsky was born in Orsha, a city in the western region of the Russian Empire. He attended Moscow State University, where he graduated with a degree in law in 1917. He studied a range of topics while attending university, including sociology, linguistics, psychology and philosophy. However, his formal work in psychology did not begin until 1924 when he attended the Institute of Psychology in Moscow and began collaborating with Alexei Leontiev and Alexander Luria

Some of the major theories developed by Lev Vygotsky include:

- Zone of Proximal Development:
- Sociocultural Theory
-

Source: <http://psychology.about.com/od/profilesmz/p/vygotsky.htm>





PENYELESAIAN MASALAH BUKAN RUTIN SEBAGAI WAHANA PENERAPAN ELEMEN KBAT DALAM MATEMATIK

Saadah binti Ismail & Khalidah binti Othman

Jabatan Matematik dan Sains

Kemahiran Berfikir Aras Tinggi (KBAT) bermaksud terdapat ciri-ciri peluasan pemikiran semasa seseorang menginterpretasi, menganalisis atau memanipulasi maklumat. Perkara ini berlaku kerana seseorang itu perlu menjawab persoalan yang timbul atau menyelesaikan masalah yang dikemukakan. Onosko dan Newmann (1994) menjelaskan bahawa Pemikiran Aras Tinggi (higher-order thinking) ialah penggunaan minda secara meluas untuk menghadapi cabaran baharu. Penggunaan minda secara meluas berlaku apabila seseorang itu perlu mentafsir, menganalisis atau memanipulasi maklumat untuk menjawab soalan atau menyelesaikan masalah yang dikemukakan.

Penerapan elemen KBAT dalam pengajaran dan pembelajaran (PdP) amat penting selaras dengan tuntutan Falsafah Pendidikan Kebangsaan dan keperluan negara ke arah k-ekonomi. Dalam kurikulum KBSR dan KBSM yang disemak semula, kemahiran berfikir adalah antara unsur utama yang diberikan penekanan dan dinyatakan secara tersurat dalam Modul Kemahiran Berfikir dalam PdP (2002, KPM). Dalam Kurikulum Standard Sekolah Rendah (KSSR), elemen Merentas Kurikulum diberikan penekanan supaya kemahiran berfikir dapat ditingkatkan dalam kalangan murid.

Masalah Bukan Rutin merupakan masalah yang tidak boleh diselesaikan mengikut kaedah pengiraan biasa. Murid perlu meneroka cara penyelesaian yang lebih mendalam untuk menyelesaikan masalah tersebut. Murid perlu mengaplikasikan pelbagai strategi penyelesaian yang sesuai untuk menyelesaikan Masalah Bukan Rutin.

Penyelesaian Masalah Bukan Rutin amat penting dalam Matematik. Guru perlu menerapkan elemen KBAT dalam pelaksanaan pembelajaran dan pengajaran (PdP) Matematik supaya murid dapat menyelesaikan Masalah Bukan Rutin dengan mudah. Semenjak dua abad yang lalu, para pendidik di seluruh dunia telah banyak berfikir tentang cara mengajarkan kemahiran berfikir (Sternberg dan Spear-Sweling, 1996). Sehubungan dengan itu, adakah kemahiran berfikir dapat diterapkan semasa penyelesaian Masalah Bukan Rutin?

Taksonomi Bloom boleh diguna pakai untuk membina soalan dan menyelesaikan masalah berunsurkan KBAT. Peringkat aplikasi, analisis, sintesis, dan penilaian boleh digunakan dalam penyelesaian Masalah Bukan Rutin. Menurut Polya (1957), terdapat empat langkah untuk menyelesaikan sesuatu masalah, iaitu memahami masalah, merancang strategi penyelesaian, melaksanakan strategi penyelesaian, dan menyemak penyelesaian kepada masalah tersebut semula.



Semasa menyelesaikan Masalah Bukan Rutin, murid perlu memahami masalah dan mengenal pasti strategi yang sesuai untuk digunakan. Murid perlu memikirkan strategi yang paling sesuai dan seterusnya menunjukkan langkah penyelesaian dengan menggunakan strategi yang dipilih. Akhirnya, murid perlu menyemak penyelesaian yang telah dilakukan semula. Jelaslah bahawa penyelesaian Masalah Bukan Rutin menjadi satu wahana penerapan elemen KBAT dalam Matematik.

Kesimpulannya, para pendidik Matematik disarankan agar memberikan bimbingan yang sewajarnya kepada murid semasa penyelesaian Masalah Bukan Rutin. Dengan cara ini, KBAT dalam kalangan murid dapat ditingkatkan. Akhirnya, wawasan untuk melahirkan insan yang berketerampilan pada peringkat global akan dapat dicapai pada masa hadapan.

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PISA

The Programme for International Student Assessment (PISA) is a triennial international survey which aims to evaluate education systems worldwide by testing the skills and knowledge of 15-year-old students. PISA is unique because it develops tests which are not directly linked to the school curriculum. The tests are designed to assess to what extent students at the end of compulsory education, can apply their knowledge to real-life situations and be equipped for full participation in society. The information collected through background questionnaires also provides context which can help analysts interpret the results. Since the year 2000, every three years, fifteen-year-old students from randomly selected schools worldwide take tests in the key subjects: reading, mathematics and science, with a focus on one subject in each year of assessment. The students take a test that lasts 2 hours. The tests are a mixture of open-ended and multiple-choice questions that are organised in groups based on a passage setting out a real-life situation. A total of about 390 minutes of test items are covered. Students take different combinations of different tests. They and their school principals also answer questionnaires to provide information about the students' backgrounds, schools and learning experiences and about the broader school system and learning environment.

Source: <http://www.oecd.org/pisa/aboutpisa/>



PLAGIARISME: PLAGIARISME DALAM KALANGAN PELAJAR IJAZAH

Hazimah Hj Samin

Jabatan Teknologi Pendidikan

Pelaku plagiat diklasifikasi sebagai 'penjenayah' yang melakukan pelanggaran etika dan tidak bermoral dalam penulisan berikutan tindakan pelajar mengiktiraf hasil penulisan orang lain sebagai hak dirinya. Menurut Mazlina (2009), kegiatan menciplak idea orang lain (mendakwa ia adalah hasil penulisan sendiri) tanpa memberi penghargaan atau tanpa menulis "citation" kepada penulis asal merupakan satu kegiatan jenayah intelek yang sering dilakukan oleh pelajar. Fenomena ini berlaku apabila pelajar mengutip pelbagai sumber rujukan dan mengabungkannya dalam satu penulisan yang lebih konkrit sama ada mengekalkan kata kunci atau mengubahsuai kata kunci dan prasa dalam petikan. Kesalahan ini bertentangan dengan objektif pelaksanaan kerja kursus (IPGM, 2013) untuk menilai tahap prestasi dan meningkatkan kemahiran pelajar membuat rujukan atau mengakses maklumat daripada pelbagai sumber. Sekiranya aktiviti penyelewengan dan penipuan ini tidak dibendung, reputasi Institusi Pengajian Tinggi (Rosniza, 2010) akan turut terjejas dan pelajar akan terdidik sebagai graduan yang tidak menghormati hak kredibilitinya orang lain tanpa memberi ruang kepada diri sendirinya untuk menunjukkan potensi intelektual mereka.

Kerja kursus merupakan salah satu aktiviti pembelajaran yang mengasah pemikiran kepada penyelesaian masalah. Penghasilan kerja kursus berbentuk penulisan ilmiah ini, memerlukan pelajar mengumpul, menyusun dan mengolah tugas mereka dengan mengemukakan idea sendiri supaya intelektual tugas pelajar dapat dibentuk, berkualiti dan menepati ciri-ciri penulisan ilmiah yang baik (Azizi Yahya, Shahrin Hasim, Jamaludin Ramli, Yusof Boon, Abd Rahim Hamdan, 2006). Oleh itu, peruntukan undang-undang bagi melindungi penulis termaktub di bawah Seksyen 25(2) Akta Hak Cipta 1987. Akta ini menetapkan pelajar yang menggunakan keseluruhan idea penulis (*the ghost writer*), menyalin sebahagian isi utama dalam ayat (*the photocopy*), mengutip dan mengabung banyak sumber dalam satu penulisan lain (*the potluck paper*) atau meminjam idea dari hasil kerja tanpa menulis 'citation' (*the self stealer*) boleh dikenakan tindakan di bawah akta ini.

Punca Plagiarisme Dalam Kalangan Pelajar Ijazah

Dalam Kajian yang dilakukan terhadap 800 buah institusi pengajian di Amerika, mendapati 16 buah institusi pengajian dikenalpasti terlibat dalam plagiat dan 40% kes tidak dilaporkan walaupun ada bukti yang jelas untuk didakwa dan diambil tindakan ke atas pelajar (Bill, 2007). Malangnya, pensyarah mempunyai alasan yang tersendiri untuk tidak melapor aktiviti pelajar ini walaupun plagiarisme menunjukkan ciri-ciri seorang pelajar yang tidak jujur dalam mengekalkan integriti peribadi mereka.

Faktor kelemahan terhadap pengurusan masa, kurang pendedahan dalam penulisan ilmiah serta ketidakmahiran pensyarah dalam menggunakan sumber menyebabkan tekanan (Wan Zah, 2000) dan menggalakkan pelajar melakukan jenayah intelek. Pelajar tertarik dengan lambakan maklumat digital di internet dan ini turut mempengaruhi tingkahlaku membudayakan penyalinan sumber (Azizan, 2010) kerana kemudahan internet menjadikan kerja mencedok 'cut and paste' maklumat bertambah mudah. Akhirnya, pelajar gagal mengkaji, mengumpul, membaca dan merumus bahan yang diperolehi tanpa menyedari mengambil dan menukar bahan ilmu sebagai hak sendiri adalah satu jenayah (Shafary, 2009).



Langkah Mengatasi Masalah Plagiarisme

Pihak institusi perlu memandang berat dan mengkaji bagaimana penularan budaya plagiarisme dapat diatasi. Penyediaan buku panduan penulisan sumber rujukan, format penulisan bibliografi yang tepat dan menyelaraskan peraturan bersesuaian dengan penguatkuasaan Seksyen 25(2) Akta Hak Cipta 1987 perlu diadakan. Selain itu, Akta Universiti dan Kolej Universiti 1971, (Tatatertib Pelajar) perlu dinyatakan dengan jelas tentang larangan aktiviti memplagiat idea, penulisan, data atau ciptaan orang lain sebagai hak mereka.

Pengesanan aktiviti plagiat dalam penulisan tesis atau tugas pelajar juga boleh dilakukan dengan menggunakan perisian komputer seperti *Turnitin*, *Scan My Essay* dan *Word Check System*. Menurut Ann dan Kathleen (2000) teknologi boleh melakukan pengesanan aktiviti plagiat yang komprehensif secara atas talian. *Turnitin.com*, *Eve2 (Essay Verification Engine)*, *Glatt Plagiarism Services*, *plagiarism.org* dan lain-lain adalah contoh *website* yang menawarkan perisian yang boleh digunakan untuk pengesanan plagiat. Sistem *turnitin.com* turut menawarkan perisian berlesen yang membolehkan pensyarah membuat padanan teks yang mungkin dari sumber tersedia bagi mencegah hak cipta orang lain ditiru. Selain itu, pelaksanaan program integriti berteraskan polisi akademik perlu dilaksanakan dengan melibatkan warga akademik dan pelajar sebagai peserta. Pendedahan ini penting supaya mereka mempunyai maklumat yang lengkap tentang tingkah laku plagiat.

Rumusan

Para pensyarah berperanan untuk membimbing konsep plagiarisme kepada para pelajardi samping tegas mengambil tindakan terhadap pelajar yang mengamal plagiat dalam kerja kursus. Pelajar harus bertanggungjawab dalam menghasilkan sebarang penulisan ilmiah dan perlu menuruti disiplin penulisan yang telah ditetapkan. Mereka perlu sedar bahawa penulisan akademik adalah satu usaha universiti untuk mengasah dan menyerlahkan tahap kebolehan akademik mereka sendiri.

Tidak dinafikan penularan kegiatan jenayah intelek ini akan menjatuhkan integriti dan kualiti graduan di universiti atau institusi. Manakala kewujudan rangkaian internet sebagai sumber maklumat perlu diberi pengawasan kerana pengesanan plagiarisme bukanlah objektif utama di dalam pendidikan tetapi yang penting ialah pendidikan sepanjang hayat yang berkaitan pencarian, pengesanan dan persembahan semula maklumat dari pelbagai sumber, berkualiti dan asli.

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PENYELIDIKAN DENGAN MENGGUNAKAN KAEDAH KUALITATIF

Mohd. Khamdani bin Sairi PhD

Jabatan Sains Sukan

Penyelidikan kualitatif ialah penyelidikan yang memberikan fokus kepada pelbagai metod, yang terlibat dalam pentafsiran dan pendekatan yang semula jadi dalam sesuatu subjek (Denzin dan Lincoln 1994). Perkara ini bermakna penyelidik yang menggunakan kaedah kualitatif berada dalam set yang semula jadi dan cuba mentafsirkan makna sesuatu fenomena tentang seseorang yang dikaji. Penyelidikan kualitatif melibatkan pengumpulan pelbagai bahan empirikal, iaitu kajian kes, pengalaman seseorang, mengkaji diri, cerita kehidupan, temu bual, pemerhatian, sejarah, interaksi, dan teks dokumen yang dapat menerangkan rutin dan masalah dalam kehidupan individu.

Penyelidikan kualitatif melibatkan kerja di lapangan dalam jangka masa yang agak lama, pengutipan perkataan dan gambaran, menganalisis informasi secara induktif, iaitu memberikan fokus terhadap pandangan peserta kajian serta penulisan tentang perasaan dan percakapan yang meyakinkan.

Penggunaan kaedah kajian kualitatif merupakan kaedah yang paling sesuai untuk melihat, mengkaji, dan menganalisis sesuatu fenomena yang berlaku (Creswell 1994). Hal ini dikatakan demikian kerana kajian kualitatif tidak memerlukan teori, hipotesis atau generalisasi (Creswell 1994).

Keterbukaan dalam penyiasatan kualitatif membenarkan penyelidik mendekati interaksi sosial yang memang sedia kompleks dan dengan mengekalkannya dalam keadaan semula jadi, penyelidik dapat meneroka kepelbagaian tingkah laku dan meluaskan kefahaman terhadap interaksi yang dihasilkan. Penggunaan pelbagai teknik pengumpulan data dalam penyelidikan kualitatif dapat menyumbang kepada kesahihan maklumat yang diperoleh.

Selain itu, pendekatan kualitatif sesuai digunakan jika perkara yang hendak dikaji melibatkan beberapa instrumen yang sesuai dijalankan seperti pemerhatian, temu bual, dan analisis dokumen. Kesimpulannya, pendekatan kualitatif ini dapat menghuraikan dan menjelaskan data dengan terperinci dan mendalam. Keadaan ini secara langsung dapat memantapkan hasil penyelidikan dan mampu meneroka sebarang persoalan penyelidikan bagi menghasilkan huraian dan penjelasan yang lebih tepat.

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SOCIAL CONSTRUCTION OF MEANING IN THE READING CLASSROOM

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The construction of meaning is considered social as well as a cognitive process (Hudson, 2007; Almasi, 1996). It does not only lie on internal cognitive processes but also in the social interaction between two or more people. Through the social construction of meaning, learners work together in pairs and small groups, and become actively involved in making sense of the texts. Learners may explore diverse views based on what they read and create meaningful interactions with others when they need to share and clarify what they understand in a way they cannot do on their own. When there are others who take an interest in what the readers are saying, they become engaged in reading and this represents more opportunity for understanding and meaning construction.

Learners employ various reading comprehension strategies to arrive at meaning during discussions of written texts. These strategies include giving personal response, reading part/parts of text to consolidate information, correcting content, interpreting, questioning information and reading and rereading the text aloud. Most learners are active strategy users but many do not use the strategies effectively that it often fails to provide scaffolding of their understanding during discussions of texts (Zaira Abu Hassan Shaari, 2008). This can be contributed to the approach to the teaching of reading, task selection and the levels of comprehension questions that do not engage learners actively in constructing meaning. As aptly questioned by Helgesen (2003) "How can we expect students to function at a higher level when we don't challenge them to?"

To increase the learners' capacity to construct meaning, teachers need to select high level comprehension tasks that will encourage learners to come out with a variety of responses and the use of multiple strategies. Teachers also need to teach their learners the art of asking questions and to use different reading comprehension strategies that lead them to higher levels of thinking. Learners will participate actively and engage meaningfully with the text when they are courageous enough to pose questions and to express and share ideas with the others.

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SIMBIOSIS ANTARA KBAT DENGAN KEMAHIRAN PROSES SAINS DALAM KURIKULUM SAINS RENDAH

Nor Ruzaini bt. Jailani dan Zuraidah bt. Yazid

Jabatan Matematik dan Sains

Perhubungan antara Kemahiran Berfikir Aras Tinggi dengan Kemahiran Proses Sains dalam Pendidikan Sains di Malaysia adalah amat rapat sekali, *umpama isi dan kuku*. Kedua-duanya saling membantu semasa proses pembelajaran Sains. Kurikulum Sains di sekolah menekankan proses *pembelajaran berfikir* (Pusat Perkembangan Kurikulum 2003) untuk memaksimumkan tahap perkembangan kemahiran berfikir murid semasa proses pembelajaran. Kedua-dua proses dan produk ialah hasil pembelajaran yang sama penting (Bahagian Pembangunan Kurikulum 2011). Bermula dengan pelaksanaan mata pelajaran *Alam dan Manusia* yang merupakan sebahagian daripada Kurikulum Baharu Sekolah Rendah (KBSR 1994), dokumen kurikulum Sains telah memperkenalkan *Model Kemahiran Berfikir Strategi Berfikir dalam Sains* (KBSB) (Pusat Perkembangan Kurikulum 1994). Strategi yang dicadangkan untuk mengembangkan kemahiran berfikir murid adalah melalui penerapan KBSB dalam proses pengajaran dan pembelajaran (PdP) (Pusat Perkembangan Kurikulum 1999). Kurikulum Sains rendah menitikberatkan aktiviti pembelajaran aktif dengan menggunakan strategi inkuiri-penemuan (Bahagian Pembangunan Kurikulum 2011). Penglibatan murid dalam proses pembelajaran adalah secara "hands-on" dan "minds-on". Dengan menggunakan strategi inkuiri-penemuan, murid dengan sendirinya akan mengalami proses mencari dan menjumpai "sesuatu" semasa belajar. Dengan menjalankan aktiviti Sains seperti seorang saintis melalui aktiviti PdP yang telah dirancang oleh guru. Menerusi cara ini dijangka guru-guru dapat memberikan pengetahuan, mengembangkan kemahiran, dan menerapkan sikap saintifik (Pusat Perkembangan Kurikulum 2003). Oleh itu, ilmu pengetahuan, kemahiran, dan sikap saintifik patut bergerak seiring *bagai aur dengan tebing* bagi membentuk murid yang berbudaya sains dan teknologi.

Apakah yang *patut* berlaku semasa proses pembelajaran Sains mengikut hasrat dokumen kurikulum Sains Rendah? Proses pembelajaran dijangkakan bermula dengan murid sama ada secara bersendirian atau dalam kumpulan menggunakan kemahiran untuk memperhatikan rangsangan yang telah disediakan oleh guru. Hasil pemerhatian akan merangsang sifat ingin tahu dan mencetuskan persoalan tentang apa-apa yang diperhatikan. Mengapa? Bagaimana? Jika Apakah yang mungkin berlaku? Andaikan. Seterusnya, murid akan merancang untuk mencari jawapan kepada persoalan yang telah dicetuskan. Murid akan menggunakan Kemahiran Proses Sains (KPS) yang memerlukan penguasaan kepada kemahiran berfikir dalam proses mencari jawapan (Pusat Perkembangan Kurikulum 1999). Dengan menggunakan ilmu pengetahuan sains, kemahiran saintifik (kemahiran proses dan kemahiran manipulatif) dan kemahiran berfikir, murid perlu mengkonsepsikan masalah, menyelesaikan masalah, dan seterusnya, membuat keputusan tentang jawapan yang paling sesuai untuk persoalan yang disiasat. Proses menaakul merupakan strategi berfikir yang perlu digunakan oleh murid *sepanjang proses* mencari jawapan kepada persoalan mereka (Pusat Perkembangan Kurikulum 1999). Murid akan memodelkan perilaku seseorang saintis, iaitu berfikir dan bertindak secara sistematik



untuk menjalankan penyiasatan. Kemahiran Proses Sains (KPS) diperlukan untuk menjalankan proses inkuiri, manakala kemahiran berfikir aras tinggi (KBAT) digunakan untuk mendapatkan jawapan. Hal ini sama seperti seorang saintis yang sentiasa perlu mempertimbangkan hasil daripada pemerhatian selain murid juga perlu mengumpulkan data empirikal melalui kaedah saintifik dan membuat penaaakulan yang rasional, objektif, dan adil. Kemahiran menaaakul ini akan digunakan sepanjang proses menyelesaikan masalah untuk mencari jawapan dengan menggunakan kaedah saintifik. Aktiviti pembelajaran Sains melibatkan kebolehan murid untuk menaaakul secara induktif dan deduktif semasa proses menyelesaikan masalah mengikut model seorang saintis (Pusat Perkembangan Kurikulum 2003). *Model KBSB dalam Sains* (Pusat Perkembangan Kurikulum 1999) bertujuan untuk memberikan gambaran menyeluruh hubungan antara kemahiran berfikir, strategi berfikir, dan kemahiran menaaakul. Kemahiran berfikir diperlukan apabila murid menggunakan strategi berfikir, iaitu apabila mereka mengkonsepsikan, menyelesaikan masalah, dan membuat keputusan. Buku Panduan Penerapan KBSB dalam Sains (Pusat Perkembangan Kurikulum 1999) telah dikeluarkan untuk memberikan penerangan tentang beberapa peringkat penerapan model KBSB dalam Sains.

Oleh itu, penerapan KBAT merupakan sebahagian daripada inti pati penting proses pembelajaran Sains Rendah. Simbiosis antara KBAT dengan KPS serta kepentingan penerapan KBAT telah didokumentasikan dalam dokumen kurikulum sebagai strategi berfikir dalam *Model KBSB dalam Sains* (Pusat Perkembangan Kurikulum 1999).

Apakah yang *sebenarnya* yang berlaku semasa proses pembelajaran Sains? Sejauh manakah guru mempraktikkan dan mengaplikasikan *Model KBSB dalam Sains* semasa proses PdP Sains semasa di dalam kelas?

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THE DEAFENING SILENCE: A LOOK AT THE SPECIAL EDUCATION ON HEARING IMPAIRED

Ramesh Rao (PhD)

Jabatan Penyelidikan Dan Inovasi Profesionalisme Keguruan

Do you know that as of 30th June 2013, there are 52,946 students enrolled in 33 special education schools? And of that, 1,357 are hearing impaired students (MOE, 2013). Act 685 Section 28 stipulates that disabled people must be given the same opportunity as of any other person. These numbers indicate the government's effort in fulfilling its obligations. Given the opportunity, achievements of hearing impaired students are the same as those of any other students (Storbeck and Martin, 2010).

Special education meant for hearing impaired children in Malaysia began in 1954 (Chua, 1976). Education meant for disabled people has its own challenges. For example, of the 33 special education schools, 28 are primary schools and only five are secondary schools. On average there are two primary schools in every state; and secondary schools are found only in Johor, Pahang, Pulau Pinang, Selangor and Kuala Lumpur. The limited number of secondary schools could prove to be an obstacle for hearing impaired students in furthering their studies. As a consequence the number of hearing impaired students furthering their studies to tertiary level is jeopardized. As a result, as what is happening in Africa, hearing impaired children might not have adults who have furthered their studies to tertiary education to look up to (Storbeck and Martin, 2010).

A book which explores deaf education is "Issues in Deaf Education" edited by Gregory (1998). It discusses issues related to deaf education notably in educational policy, psychology, linguistics and audiology. They are five sections in the book (See Table 1).

Section	Topic
1	The developing deaf child and young person
2	Language and communication
3	Teaching and Learning
4	Audiology
5	The context of the education of deaf children

Personally I found the fourth section i.e. "Audiology" to be the most challenging section as it involves understanding jargon and terminologies which are unique to hearing impaired education. On the other hand, Section 2 i.e. Language and Communication was very interesting because the issue discussed was easier to relate to. In this section, the authors revealed how hearing impaired children acquire language.

Teaching sign language to hearing impaired children will provide an avenue for them to communicate and increase their own language proficiency. Basically there is not much room for hearing impaired children to learn sign language. For instance, among the television channels in Malaysia, only news aired on RTM caters for hearing impaired people. Of course some would argue that hearing impaired people could read the subtitles or learn lip-reading, but the concern here is the exposure to sign language meant for hearing impaired children.

Hearing impaired children will start to use sign language to communicate when they are about 10 months old or when their gross motor skills are developed. There are a lot of misconceptions about sign language. For instance, though Malaysian Sign Language (MSL) is based on American Sign



Language (ASL), they are a number of versions, based on dialect of the state (Masitry, 2013). Hence introducing sign language to hearing impaired children should be made as early as possible.

The question is whether the education system provides the opportunity or avenue for this to take place. I believe Community Development Department or better known as KEMAS could be used for this purpose. Through its Child Guidance Centre (TABIKA) and Child Care Centre (TASKA), hearing impaired children could come to learn the sign language at an early age. Children in the age group 2 to 4 years are accepted to TASKA, while those in the age group 4 to 6 are placed in TABIKA.

The notion of teaching these special learners is certainly a noble endeavour which requires specialised skills and competency from both parents and teachers alike. In the context of teaching and learning of hearing impaired children, the challenge is in twofold. First teachers must be able to communicate with the children and teachers must have the specific pedagogical knowledge meant for the hearing impaired. The supply of teachers catering for the ever increasing number of hearing impaired students is a matter of concern. Johnson's (2004) study indicates there is a persistent shortage of teachers of the sign language. On top of that the number of teacher education programs specialising in hearing impaired is also decreasing.

In Malaysia, Institut Pendidikan Guru Kampus Ilmu Khas (IPGKIK) is the one of the teacher training institute offering special education programme. One area of specialty is their training for teaching of the hearing impaired. IPGKIK is able to ensure that the teachers are well trained in this area of special education. However these teachers are eventually placed in schools with special needs programme. Pre-schools in general and TABIKA/TASKA in particular are in dire need of these specially trained teachers too; as early intervention could open up the silent world these special children face.

Collaboration through outreach programmes among IPGKIK and pre-school institutions could be of tremendous help for the hearing impaired children. It could be a learning platform for both the institutions. Pre-school teachers would gain knowledge and expertise for the teaching of hearing impaired children while opening up research areas for the Special Education Department at IPGKIK to venture into. Among the areas which lack research is how young hearing impaired children in multilingual Malaysia acquire language. And who knows, it could lead to the birth of a new theory of learning!

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WOULD I BE ABLE TO PLAY THE PIANO OR NOT?

Edna Wellington
Jabatan Pendidikan Muzik



It was an exciting moment for the music major trainees when they first signed up for piano as a major instrument paper. The piano is an instrument for any age group to explore the beauty of its melodious sound. Learning to play the piano is a very rewarding experience but it can sometimes come with some frustration as well. Some concerns were expressed by the trainees at the start of their piano class. Some interesting questions that arose were, "Ma'am, I feel very nervous. I have never played a piano before", "Can you tell me more about the piano?", "How do I use both hands at the same time?". This group of trainees have never had the opportunity of playing a piano during their childhood days but appreciate the beautiful melodies played by famous musicians on this instrument. As a start to the lesson, I decided to answer my piano students' concerns so as to motivate them to explore the beauty of playing a piano.

What is a piano? The piano consists of 88 keys comprising of black and white keys and each key plays a different note. Multiple keys can be played at the same time to create chords and harmonies. How does this happen? When a piano key is pressed, a hammer flies up and strikes the strings tuned to produce the pitch of a note then falls away to stop vibrating. A shorter, lighter string, under more tension, vibrates faster, and produces a higher-pitched sound and vice versa. The production of sound is also determined by the usefulness of a soundboard. The soundboard gives each piano its own unique sound and also helps to amplify the sound. The damper which is covered with a felt pad, keeps the strings from vibrating when they are not being played. On the other hand, when a key is released, the damper moves back onto the string and stops vibrating. There are either two or three pedals that work with your feet. The right pedal is known as the damper or sustaining pedal which allows notes to be sustained even after a key has been released. The left most pedal is known as a soft pedal because it moves the hammers to allow the music to be played a bit softer. The middle pedal generally lifts the dampers for the notes being played at the time.

Some tips to be followed for beginning piano players.

- * Learn the names of notes on the white keys



- * Learn the names of notes on the black keys.

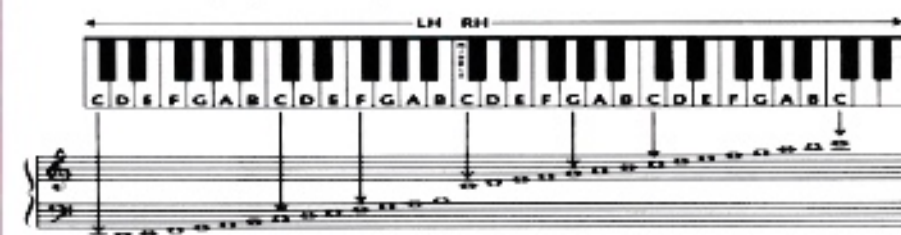




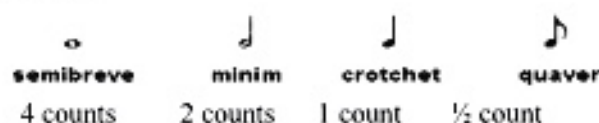
- * Get some musical knowledge about names of notes on the staff.

What is a staff? It is a set of five lines and four spaces with its own pitch.

- * The piano uses two staves (plural of staff) with corresponding clefs known as the treble clef and bass clef. Notes written on the line or space with a treble clef indicate notes that are played on the piano with the right hand. On the other hand, notes written on the line or space with a bass clef indicate notes that are played on the piano with the left hand.



- * Identify also the various types of note values used in piano scores and the meaning of time signatures. Example:-



The most common simple time signatures are 2, 3 and 4

4, 4, 4

As a start, try playing this favourite song on the piano. It will be fun.

Happy Birthday

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