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International Research Journal of Education and Sciences (IRJES)

Building Entrepreneurship Character Through Entrepreneurship Education (Study in Class XI Students of Computer and Network Engineering (TKJ) Programs at SMK Muhammadiyah 3 Banjarmasin)

Sri Setiti & Weny Andini Sari

***Abstract* – The aim of this research is to find out the entrepreneurship education of students, to know the character of students' entrepreneurship and whether the influence of entrepreneurial character through entrepreneurial education. This research design uses the mixed method methods. The research subjects consisted of 72 students of XI TKJ. The results showed that entrepreneurship education for students of XI TKJ amounted to 74.64% with high category and the character of entrepreneurship in students of XI TKJ amounted to 76.01% with high category. Based on the calculation of the SPSS results there is an influence on building the character of entrepreneurs through entrepreneurship education in students of XI TKJ amounting to 59.9% while 40.1% is the influence of factors outside variables that are not examined. While based on the contribution of entrepreneurship education variables with entrepreneurial character of 0.358. From these results it was concluded that entrepreneurship education had a positive effect on entrepreneurial character.**

***Keywords* – Entrepreneurial Character, Entrepreneurship, Entrepreneurship Education, Vocational School**

I. INTRODUCTION

As the part of the National Education System, Vocational Education is the most important level of secondary education in the development of students' ability to work with certain skills, more specifically can prepare students to be ready to work in the industrial world, entrepreneurship independently, or can also continue to higher education in accordance with the department and develop themselves later. In other words, vocational schools play a role in preparing students to ready to work, both working independently with entrepreneurship and filling in existing job openings. Vocational students are deliberately prepared later to enter the workforce either through career paths to become middle-level employees or to become independent, self-employed or entrepreneurs.

According to Astamoen (2008) in Waskito (2015: 337) "Most parents provide motivation and aspirations so that their children become employees and rarely provide motivation to have pride as an Indonesian nation in any field including one as an *entrepreneur"*.

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If someone is able to read opportunities to develop new products or new ideas in building a business with a new concept, that person can be said to be an entrepreneur.

Entrepreneurship education taught at school as a lesson is quite easily adapted to the circumstances of the general lessons given to students aiming to instill the entrepreneurial spirit in students as a provision so that after attending school they have the ability to entrepreneurship by applying entrepreneurial character. The character of entrepreneurship in vocational schools needs to be considered well through the entrepreneurial education system in particular.

The optimum learning process for entrepreneurship is not due to the lack of entrepreneurial practices so that students still lack understanding of entrepreneurship learning and students are still lacking experience in entrepreneurship. In reality, in the absence of entrepreneurial practices in schools there are students who underestimate entrepreneurship learning because it does not affect graduation.

II. PROBLEM STATEMENT

There is no optimum learning process for entrepreneurship because of the lack of entrepreneurial practices so that students are still less aware of entrepreneurship learning and students are still lacking experience in entrepreneurship. In reality, in the absence of entrepreneurial practices in schools there are students who underestimate entrepreneurship learning because it does not affect graduation.

III. LITERATURE REVIEW

According to Drucker (1994) in Kasmir (2016: 20-21) "Entrepreneurship is the ability to create something different from what was before. This understanding implies that an entrepreneur is a person who has the ability to create something new, different from others or being able to create something different from what was before. In order to maintain the dignity of human life, who have the opportunity to develop abilities and foster their lives in society, namely through education ".

Entrepreneurial character is a characteristic, character, nature and behavior typical of entrepreneurs that distinguishes it from others (Daryanto and Cahyono, 2013: 7).

IV. METHOD

The method used in this research is *mixed methods.* This research is a research step by combining two pre-existing forms of research, namely qualitative and quantitative research. Researchers used the mixed methods method to better understand the research problem by triangulating qualitative data in the form of descriptive details with quantitative data in the form of numerical data.

Overall the total population of this study was students of XI TKJ which amounted to 72 people with saturated sample technique. The variables used in this study were independent (independent) variables were entrepreneurial education (X), and the dependent variable was entrepreneurial character (Y). Data collected through interviews and questionnaires. The data analysis technique used was triangulation and simple linear regression analysis to find out how much influence between entrepreneurial characters through entrepreneurial education.

V. FINDINGS

The influence of entrepreneurial education to entrepreneurial characters can be seen at following table:

TABLE I. MODEL SUMMARY OF THE REGRESSION

ModelSummary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	, 599[a]	, 358	, 349	6,046	1,652
a. Predictors: (Constant), EDUCATIONAL ENTREPRENEURS					
b. Dependent Variable: ENTREPRENEURS CHARACTERS					

Based on the results of simple regression in the table above, it is known that the value of r is 0.599, meaning that the character of entrepreneurs influences entrepreneurship education by 0.599. The simple r regression value is consulted with table 3.9 about the interpretation of the value of r indicating the medium category. So that it can be seen the value of $r_{count} > r_{table}$, which means there is an influence of entrepreneurial character through entrepreneurial education in students XI TKJ as a hypothesis in the study can be accepted, namely entrepreneurship education has a positive and significant influence on the character of student entrepreneurship that is equal to 59.9% while the rest 40.1% is influenced by other factors. Building the character of entrepreneurs through entrepreneurial education is included in the medium category, it can be concluded that entrepreneurship education can build students' entrepreneurial character.

VI. DISCUSSION

According to Isjoni (2003: 235) "Entrepreneurship Education needs to be developed, as affirms that entrepreneurship education that needs to be developed is education that can develop the willingness and ability of students to have entrepreneurial attitudes, knowledge and character in order to obtain provision to create their own livelihood and to be able to meet family needs or livelihoods ". Entrepreneurship Education is a whole education, not just a theoretical or technical aspect. But it also requires the cultivation of entrepreneurial attitudes and mentality.

Simple regression results from building entrepreneurial character through entrepreneurship education amounting to 59.9%. The results obtained are then interpreted in the form of interval coefficients in the medium criteria. This proves that entrepreneurship education can sufficiently build the character of student entrepreneurship that is equal to 59.9% and 40.1% is the influence of other factors that have never been studied.

VII. CONCLUSION

The conclusions of this research are:

1. The results of interviews with entrepreneurship teachers, entrepreneurship education in SMK Muhammadiyah 3 Banjarmasin is based on the condition of people who are still educated unemployed who have not got a job, high competition in the world of work, and there are still many schools that cannot provide skills for students such as knowledge about entrepreneurship. Solutions for students also need and acquire skills, for example by holding entrepreneurship practices by processing products owned by selling values, developing interests and talents of students so that they are able to communicate, behave politely, have the ability to create their own job opportunities. This is in accordance with the description of entrepreneurship education in students XI TKJ SMKM 3 Banjarmasin included in the high category with an overall percentage of 74.64%.
2. Based on the results of interviews with entrepreneurial teachers in general, the entrepreneurial character of students is seen when undergoing relationships with friends. For that reason, the character of entrepreneurship in schools needs to be considered well through the entrepreneurial education pathway in particular, so that environmental conditions that apply the character of entrepreneurship are needed, students become accustomed to applying it and in the end will become the character of students' personality that can be obtained from the existence of entrepreneurship education in schools. This is in accordance with the description of entrepreneurial character in students XI TKJ SMKM3 Banjarmasin included in the high category with an overall percentage of 76.01%.
3. Based on the results of SPSS calculations it is known that the influence of entrepreneurial character through entrepreneurship education in class XI TKJ at SMKM 3 Banjarmasin amounted to 0.599 means the influence of entrepreneurship education (X) with entrepreneurial character (Y) amounted to 59.9% while 40.1% is the influence of factors others in these variables that have never been studied. While based on the contribution of entrepreneurship education variables (X) with entrepreneurial character (Y) of 0.358. From these results it can be concluded that entrepreneurship education (X) has a positive effect on entrepreneurial character (Y), so that the influence criteria are in the strong and significant category.

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The Role and Transformation of Residential College as an Internationalisation Hub

Mohd Hairul Anuar Razak, Nor Huda Abdul Hamid, & Nurhazlini Rahmat
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Abstract **- This research focuses on the internalisation of residential college in Malaysia, which is closely linked to globalisation. According to Zaid Ahmad (2006), globalisation creates a hub of dependency and sharing between countries. In this regard, internationalisation is linked to activities involving participation in the international environment and involvement with various parties in the quality educational settings. For instance, Malaysia Education Blueprint 2015 - 2025 (Higher Education) through its Shift 8 has emphasised on the roles that students can play in the enhancement of knowledge, capability of innovation, as well as the cultivation of first-class mind. The willingness to accept and openness are the two fundamental elements in the concept of internationalisation. With the opening of new markets, through innovative programmes and collaborations, the number of international students in Malaysia is expected to rise to 250,000 by 2025 (The Guardian, 2014). Therefore, students' development requires a comprehensive and balanced approach that consolidates scientific, academic and strategic managements. This is when the residential colleges play their roles in providing additional assistance in sustaining the expansion of internationalisation. Through the integration of local and international students' involvement and residential colleges' staff supporting roles, all parties involved will gain the privilege to learn and share knowledge from each other while establishing international cooperation. As mentioned by Nye, Joseph S. Jr. (1991), Malaysia needs to be more involved in its international relations as this is crucial for the establishment of a new dimension in the national education system. As we are aware, the internationalisation of education sector and the development of the education hub have become a new global trend. Thus, the competition becomes increasingly high. Therefore, in this paper, the authors discuss several aspects that can be considered in the establishment of residential colleges as a hub of internationalisation, which are: 1. The willingness to accept foreign students amongst residential college's students and staff. 2. The stability of financial provision. 3. The transformation of education and planning of activities. 4. The training and empowerment of students and management staff 5. The international network and collaboration.**

Keyword **- Internationalisation, residential college management, globalisation, educational hub, educational transformation, mobility and exchange programme**

I. INTRODUCTION

In the era of globalisation, knowledge becomes a commodity moving in all countries. The development of knowledge-based human capital globally has led not only to intellectual competition, but in many contexts including the sharing of knowledge without boundaries. Globalisation is seen as a human development platform for a change that occurs. In terms of the higher education system, it can be defined as "flow of technology, economy, knowledge, human, values and ideas that can be transformed along the boundaries" (Knight, 2002). Furthermore, globalisation is an important role in realising internationalisation. The dimensions of higher education are increasingly important and complex and in line with international convergence. This challenges can lead to new reformation in terms of opportunities, advantages, risks and challenges to internationalisation in higher education institutions (Knight, 2008). International academic mobility is one aspect of internationalisation especially in the context of which it relies on the number, scope and impact of such mobility (Bhandari & Blumenthal, 2009).

University residential college management plays an important role in ensuring that its residents are in a conducive state. The internationalisation in residential colleges environment has a major impact on the managements and students of a residential college. Various factors must be taken into account and it will affect many things. According to Jamaludin Mohaiadin (2005), a residential college plays a role in providing accommodation services that provide support, facilities and whatever needs to make academic progress and an effective learning process. The residential college also plays a role in the process of self-formation and student personality in self-development and leadership activities. In addition, with mobility programme activities can develop potential talents and abilities among the staff and students.

II. PROBLEM STATEMENT

Internationalisation in education sector and education hub development has become a new global trend. Thus, the competition becomes increasingly fierce. The international students hub of Malaysia is among the highest in the world with international students. The number of registered high-ranking students has increased from 45,000 in 2007 to almost 100,000 in 2014. The National Transformation Program (NTP) Annual Report 2017 showed that international student enrolment, with 170,068 enrolments in higher learning institutions in 2017 as compared to 70,000

in 2010. This shows an increase of one hundred percent since the launch of the National Higher Education Strategic Plan 2007-2020 (PSPTN). Malaysia is on the right track to become an international students hub and efforts need to be continued to improve its position. International studies showed that only one-third of successful large-scale programme transformation and this study shows that poor resources or planning are not usually the main cause of failure but because of lack of resolution, timing, and commitment from top management (Keller, S & Price, C., 2011). Research indicates that only a third of large-scale transformation programmes has succeeded in delivering and sustaining results. Typically, education system reformation does not fail due to lack of resources, but it fails for for common reasons such as insufficient will, time, and commitment from political and Ministry leaders; inability to stay the course under intense challenges from those opposed to change; paralysis in the face of polarising debates; resistance to change amongst stakeholders and institutions; or talent and capacity gaps within the Ministry.

Internationalisation has a widespread effect on all level of higher education and the main focus of this paper is to see the role of students' residential as a main medium for transformation. Various factors must be taken into account and those factors are as follow:

a) Awareness of receiving international students and sending them abroad. Are residents of students' residential and management willing to accept international students? How to utilize students' residence as the primary medium to send our local students abroad?
b) Facilities within the residential college area. What is the condition of the facilities? Does it services served international students accordingly? Are the systems appropriate to them?
c) Integration between international and local students. It is recommended to use the method of integration for their accommodations. This will help to improve achievements of objective that is to expose them to globalisation and not merely focusing on structured activity only. Other than that, we also can specify the rooms for international students who wish to stay in the short term period (not a normal semester) and a number of local and international students per intake for a specific period of time.
d) Provide training for administrative staff and local students in managing international students. This can be done by offering English communication course. Is it necessary to have dual languages for all forms and documentation purposes? Last but not least is about the preparations of receiving international students and to explain the uniqueness of our country to them.
e) Educational transformation and student activities in residential colleges for international students.

In this study, the authors view the responsibility of the college as the act to identify the basic issues and to identify the appropriate situation for international students, as well as activities involving internationalisation. Each individual receives various information from their environment and attempts to interpret such information based on their own understanding. Perceptions have great influence in determining individual and also community behaviours (Sarjit & Amir Zal, 2008). Hence, the initial perception of any residential college must be excellent. According to Mohamad Suhaimi (1994), students' accommodation cannot be a successful hub for internationalisation due to its prolonged failure. Therefore, it can only be viewed as a place for completion of educational process. Time allocation and rest area for students should be taken into account too. Zainal Ariffin (1996), added that the quality of life in residential college is one of the contributive factors to students' development which entails their accommodation, facilities, management, activities and also engagement.

3. COLLEGE AS A HUB FOR INTERNATIONALISATION

All higher education institutions in Malaysia must demonstrate the best example as a hub for internationalisation by improving the process, skills and culture, so that they can continuously develop towards transformation of the higher education system in Malaysia.

In order to achieve this objective, the writer argues that as a hub for internationalisation,
residential colleges should play its significant roles.

3.1 The Management of College Residential

3.1.1 Willingness to accept students and oversea guests.

We have to be ready to accept students and visitors from outside as it is very important as we need to make an early arrangement and preparations for them.

3.1.2 Provide appropriate facilities and services.

This issue should be taken seriously as it would give different perception towards others especially to the residents themselves. For example, to provide large size of chair and bed for them as some of them have a large physical condition. Other than that, laundry facilities, pantry, water heater, dual language sign directions, telephone lines and international fax at the college office. A brief orientation approaches also helpful in enhancing international students' understanding of the systems used in residential colleges as well as helping them to familiarise themselves with new environment.

3.1.3 Provide training to respective staff in handling students and guests from overseas.

Communication and management trainings should be provided to the front desk staff at the main office as this would help them to facilitate students and also guests from overseas. In this case, the use of forms and documents must be in dual languages as it is involving international affairs. It is very important to facilitate their needs.

3.1.4 Budget Allocation and Management

Budget for sending our local students and staff abroad for this programme is very huge thus need to have strong financial resources as the planning and its implementation are in a long term of period. So, the financial resources must be self-regulated and should be based in the residential college.

3.1.5 The roles of principals, managers and fellows in creating international linkage with others.

The roles of principals, managers and fellows as a third party in managing and planning the programme is very important. Their roles are to develop, communicate and collaborate with other party as to ensure that the programme will be running smoothly. Therefore, all matters related to students and staff accommodation, students' activities, financial and decision making can be managed and done in a short period of time.

3.2 Student's level

3.2.1 Students able to plan some activities for the international students.

Students High Council is the key to foster empowerment of students development & soft skills. Responsibility and trust as a leader can be strengthened up by providing opportunities to them to organise and plan international activities in university campus. The experience of developing and carrying out international activities can foster awareness and gain experience and build up of skill-building skills. Therefore, with the cooperation between the students residential management & students High Council, both party should be given the opportunity and involved in international activity planning.

HLIs and University management also can play greater role to coordinate and monitor in supporting students development for internationalisation activities. In order to establish interaction & collaboration, all entities in HLIs need to integrate their activities with engagement of the students in academic, industry engagement, community service, sport and cultural programmes. In the end of result, students are able to apply their leadership, soft skills and diplomatic skill to balances and holistic graduates (Malaysia Education Blueprint 2015 – 2025 (Higher Education)).

3.2.2 Foster the spirit of volunteerism.

Sincerely helping and genuinely collaborating are a noble practice and need to be learned among university students. On the topic of internationalisation, students must be trained to volunteer and become exemplary figures . In this case, the buddy system adaptation in the experiential learning aspect of the buddy needs to be adjusted and this must come from the students themselves to be happy to help students or overseas guests. The main purpose is to embrace the attitude of volunteers. Therefore, the students can aware of role and the spirit of volunteerism and creating a sincere attitude in helping others people.

3.2.3 Students are medium of information transfer and transmission

In the contexts of internationalisation, students can be considered as little ambassadors of any institution. Therefore, they must be able to deliver the accurate information and need to be able to deliver effective communication and presentation. Moreover, it is an appropriate approach to make students as focal point of information channel and transmission as communication among local and international students have been known to enhance better understanding, hence creating good perception and interaction among these students.

3.2.4 Preparation for abroad study.

In supporting students' opportunity and experience in the persuance of their study, many factors need to be considered and prepared. This includes the assistance on their departure day, support when they are abroad and arrangement on their home arrival. All these preparations include language classes, financial support, transportation service, lecture slots, credit transfer, activity schedule and other related matters. Mobility aspects also need to be considered as it a medium for students to know more about cultural, political, economic, social and educational aspect of their host country. In this aspect, lifelong learning plays an utmost role in ascertain these aspects are well presented to students. Having said so, the guidelines need to be created to ensure its application in the aspects of security, health, finance and academic. This is where university and its international office come into picture where they would be the responsible parties who will be actively monitoring students well-being during their learning endeavour, so that they would be able to apply the concept of learning process. The learning service will challenge students to apply what they have learned and not to only attain the real outcomes of learning that benefit their community, but also to deepen their understanding which will then contribute to their self-

development and community betterment (Eyler, J. and Giles, D., (1999).

III. CONCLUSION

In line with government's aspiration to achieve develop country through the implementation of Malaysian Education Blueprint 2015-2025, it is important to widen our conceptual awareness of internationalisation. Thus far, the effectiveness of internalisation concept has been acknowledged. Although its roles in the aspect of life-long learning are yet to be recognised, but its contribution towards the transformation of education cannot be disregards. Internationalisation must be clear in the context of the students' residential as a hub and the medium of internationalisation. Students can be exposed to new cultures and through continuous interaction with international students from diverse countries, as well as to help create a better personality development and soft skills among university students and staff. Therefore, in order to sustain the positive impacts of intertionalisation the authors strongly suggest that factors such as localise contribution, volunteerism, community engagement and industry penetration should be considered at any residential colleges.

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Introduction of STEM Teaching Approaches

Lee Tze Jiun, Nurzatulshima Kamarudin, & Mohd Khairul Azmi Ahmad

Abstract **- It is crucial for students to realize the importance of academic achievements in Science, Technology, Engineering and Mathematics (STEM) subjects in the 21st century. Some countries are facing a shortfall in providing highly-skilled workers in STEM industries. STEM concepts today are part of multidisciplinary and integrated educational systems which are desperately needed in any workforce. As the world becomes a technologically advanced society, countries that wish to stay competitive in the 21st century global economy, must have effective practices and skilled workers in the STEM fields. To remain competitive in this challenging world, there is an urgent need to enhance the quality and knowledge of STEM education. This paper will discuss teaching approaches that can be used in STEM teaching. A few activities suggested from previous research and base on concept of teaching also will be discussed. Through these STEM activities, students can benefit enhancing their academic, career and personal development.**

I. INTRODUCTION

STEM ideas have been applied centuries ago through the Industrial Revolution which focused more on engineering to generate technological revolution in automobiles, machines, instruments and others. People involved in these interventions, such as Thomas Edison etc., received only little education or under traineeship (White, 2014). However, although history has shown the importance and significance of STEM in our lives, it is still hard for students nowadays to maintain a high level of interest if STEM is simply introduced to them. Without a doubt, the school education system is still one of the ways students can gain STEM knowledge. STEM subjects are currently taught independently from each other even though in most of the workforce in developing countries, STEM disciplines overlap (El-Deghaidy & Mansour, 2015; Wang et al., 2011). Hence, it is important for educators to identify the various alternative teaching approaches in STEM curriculum and the barriers that must be overcome to make possible the integration of teaching STEM subjects.

STEM Teaching Approaches

It is important for teachers who wish to teach in STEM fields to equip themselves with profound knowledge in STEM (Ejiwale, 2013). Therefore, it is essential for teachers to be prepared with teaching approaches for STEM education. Various types of STEM teaching approaches are discussed below:

A. 5E Learning Cycle/ 5E Instructional Model

Liu, Peng, Wu, & Lin (2009), Aydin & Yilmaz (2010) and Abdi (2014) are some of the researchers who used the 5E Learning Cycle teaching method in their researches (STEM). 5E Learning Cycle is considered one of the constructivist approaches (Aydin & Yilmaz, 2010). According to Khalid & Azeem (2012), constructivism encourages learners to use their prior knowledge and experiences to construct information. At the same time, it encourages leaners to actively build their own new knowledge, test their hypotheses, rectify former information or justify existing knowledge. Constructivist learners are able to make connection about their world and construct new ideas by relating their present understanding with their past information (Kang, Brian, & Ricca, 2010). Sometimes, new experiences can be transferred to learners from their teachers instead of gained personally. These new experiences allow the learners to have better thinking and motivate them to make their own investigation (Martin, Jean-Sigur, & Schmidt, 2005).

The 5E Learning Cycle originated from Atkin and Karplus. They proposed the learning cycle of exploration, invention and discovery. These terms were later revised to the 5E Learning Cycle (also known as Instructional Model) which are Engagement, Exploration, Explanation, Elaboration and Evaluation. The discussion below summarises the different phases of the 5E Learning Cycle (Bybee et al., 2006):

1. Engagement

Teacher uses simple activities to engage students' prior knowledge with new ideas that could ignite students' curiosity. The activities should make a connection between past and existing knowledge, reveal old ideas, and help the students achieve learning outcomes.

2. Exploration

Teacher provides problem statements for the students to collect evidence and conduct investigation. This can be done through lab activities which help the students generate new concepts, and skills as well as identify any misconceptions that is different from their prior knowledge.

3. Explanation

This is the part where the teacher explains the concepts to students to bring them toward extensive understanding. A learner demonstrates scientific explanations based on their engagement and exploration journeys which at the same time enable them to express their understanding, demonstrating their processing skills or behaviors. A concept, process or skill can be introduce by the teacher directly throughout this phase.

4. Elaboration

In this phase, students are able to apply new conceptual understanding and skills to new problems or activities. Students use new experiences to gain deeper understanding, extensive knowledge, and sufficient skills.

5. Evaluation

Teachers have the chance to evaluate students' progress in achieving the educational purposes. In this phase, students are also able to evaluate their understanding and potentials.

Several researches have applied the 5E Learning Cycle and showed promising outcomes. For examples, in their study of fourth-grade students, Liu et al. (2009) compared the effectiveness of the 5E Learning Cycle before and after students experienced it. According to the researchers' findings, the learning activities increased their knowledge level (recall and recognition) of the subject (aquatic plant) they had learned. The activities also enhanced students' level of understanding of the (aquatic plants) content. The level of understanding included discussions, explanations, and restatements. In addition, the 5E learning activities improved students' engagement in mobile learning activities (scientific inquiry), which at the same time enhanced students' learning motivation toward natural science.

B. Inquiry-based learning

Inquiry-based learning may considered as well as the constructivist model of thought that aims to motivate students to do more investigation in scientific finding from very complicated procedures to logical and scientific (critical) thinking (Pedaste et al., 2015). According to the *National Science Education Standards*, science education should provide students with the fundamentals and concepts of science, skills of reasoning, scientific skills, and connections with the nature of science. Hence teaching science through inquiry enables students to create a new problem statement and look for alternative explanations or solutions that answers that problem statement (National Research Council, 2000).

There are four levels of inquiry-based learning namely Confirmation inquiry, Structured inquiry, Guided inquiry and Open inquiry. How a teacher decides to use one of the inquiry levels would depend on how much students rely on the teachers' guidance or how much the teacher provides information or resources to the students (Gautreau & Binns, 2012; Trna, Trnova, & Sibor, 2012). Teachers can either let students experience various levels of inquiry during a single lesson or just one inquiry phase in a single lesson, depending on the content of a subject (Lee, Kamarudin, Tablib, & Hassan, 2017). Below are the descriptions of the four levels of inquiry-based learning (Buck, Bretz, & Towns, 2008; Kamarudin, Phang, & Lee, 2017; Martin-Hansen, 2002; Raychowdhury & Sterling, 2013):

1. Confirmation inquiry-based learning

This phase is considered as the lowest level of inquiry. Students are provided with problem statements, background, step-by-step procedures, methods, results analysis, and means of results communication. Students only need to confirm scientific principles and results of the investigation can be foreseen by the students. Confirmation inquiry is suitable for students who have newly experienced laboratory techniques. It can build up their scientific concepts and give better comprehension of scientific skills. Confirmation inquiry activities are referred to 'cookbooks' which can served as fundamentals for the development of students' inquiry before proceeding on to higher phases.

2. Structured inquiry-based learning

At this level, problem statements, step-by-step procedures and methods are still provided to students; however, students need to conduct the investigation and collect evidence for the problem statement. Students are required to carry out the laboratory activities based on the procedures provided by the teacher and discover any possible outcomes. Students are not told the investigation results ahead of time. Teachers are encouraged to carry out a classroom discussion at the end of the inquiry activities in order to share scientific explanation or interpretations based on the evidences collected by the students during the investigation (Lee et al., 2017). Structured inquiry acts as the basis for more open-ended inquiry.

3. Guided inquiry-based learning

Students only receive research questions. Students will create the procedures to answer their research questions and come up with explanations based on evidences they have collected. Basically, the teacher will ask the students to form groups and collaborate in designing the procedures required. Guided inquiry gives more opportunities for students to design methods and increase their level of curiosity. This type of inquiry is very suitable for students to learn and design their experiments in different ways as well as practise data recording. Even though students are the one who design the procedures, the teacher still can give advice and play an active role to make the research plans successful.

4. Open inquiry-based learning

Students focus on a phenomenon which they wish to investigate; in other words, they have full authority to choose a problem statement to investigate. In open inquiry, students formulate a problem statement, generate a hypothesis and create their own procedures or design. Students who use this type of inquiry need to have higher-order thinking and they directly deal with the concept, resources, apparatus and other aspects. The teacher's role becomes critical in this phase as they need to guide and motivate students to be involve and to enjoy the open inquiry activity (Zion, Cohen, & Amir, 2007).

Avsec & Kocijancic's (2014) studied inquiry based learning (IBL) on 91 technology education students. It was a three-day quantitative research. The results showed that students who received inquiry based learning approach had better technological knowledge, problem solving skills, critical thinking, and decision-making skills. The researchers suggested that this IBL education model is equally suitable for males and females for enhancing their learning skills. Thus, teachers who wish to use the IBL approach are encouraged to do more inquiry teaching and come up with their own instructional design which can engage students in inquiry learning (Duncan, Pilitsis, & Piegaro, 2009).

II. CONCLUSION

Today, it is not only teachers who are responsible for students' learning but also students themselves. STEM education requires innovative teaching to engage students in developing their critical thinking and constructing their own understanding. The challenges that educators face today is making STEM subjects interesting and enjoyable to learn, which also reduced the chances of students dropping out from STEM fields.

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Relationship between the Dimensions of Senior Subject Teachers' (GKMP) Instructional Leadership and the Learning Organisation at Schools

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***Abstract*-Generally, education is aimed at ensuring that every student is provided with the knowledge, skills and values to succeed in future life. In Malaysia and around the world, awareness of the importance of change in education towards ensuring our country remains globally competitive, has to take place in parallel with the post-industrial IR 4.0 era. Flexible human capital requirements necessitate a change in the education system. Accordingly, schools as a learning organisation is a concept that was firstly examined by researchers and school leaders in the field of education. Schools that show improvements in performance are schools where not only are their students learning, but all of the school's staff are constantly learning and improving work practices for excellence. One of the catalytic factors for change in school is instructional leadership. The focus of this study is to examine the relationship between the dimensions of instructional leadership practice by senior subject teachers with learning organisations at secondary schools. This study uses as instrument adapted from the Principal Instructional Management Rating Scale questionnaire, PIMRS by Halinger (2000) and modification of instrument by Zamzam (1999) to measure instructional leadership of senior subject teachers. Learning organisation was measured by Learning Dimension of Learning Organizational Questionnaire (DLOQ) built by Watkins and Marsick (1996). The findings show that the instructional leadership of senior subject teachers has a significant correlation to the learning organisation in school. This means that when the instructional leadership of senior subject teachers increases, the learning organisation in the school also increases. Improved practice of instructional leadership by senior subject teachers in all three dimensions which are defining school missions, managing teaching programmes and creating a positive learning environment can enhance the practice of learning organisation. In line with this finding, GKMP should always be clear and understand the vision and mission of the school as well, and together with its team members from various departments, establish their respective vision and mission that are consistent with the school's. Senior subject teacher should also act as mentors to team members in guiding the implementation of best practices in the learning process in the classroom and thus promoting collaboration in teams. Most importantly, senior subject teachers should be able to create a positive learning environment to improve the practice of learning organisation at schools.**

***Keywords*: Instructional leadership, senior subject teachers, learning organisation**

I. INTRODUCTION

Education is an obligation that a country has towards its children as it is a direct link to a prosperous economy and nation. As such, providing quality education has become a goal for the Malaysian Ministry of Education. Changes in the economical and technological sectors are closely related to education. In this case, the industrial revolution IR 4.0 which leads to the growth of information technology has impacted and altered the direction of national education. Prior to this, the industrial sector focused mainly on computers and automation, but now, the focus has shifted to cyber physical systems, such as Internet of Things (IoT), cloud computing and cognitive computing.

The rapid changes taking place in the industry enforced changes in the education field. An educator's responsibility is to prepare his students to live in the world that is coming some 30 to 50 years in the future. Therefore, schools and institutions of learning can no longer remain static with the existing learning methods. Upon realising this, the Malaysian Ministry of Education launched the Main Education Development Plan (PIPP) 2006-2010 (KPM, 2013). In the PIPP, the human capital development programme aims to increase the mastery of knowledge, instill skills and discipline in students as well as ensure they have a strong sense of identity in order to navigate the challenges of the 21st century.

In facing global challenges and changes, the organisation that excels and has the ability to compete, is more often than not said to be the learning organisation. The learning organisation refers to an organisation wherein the members are skillful and always expanding their own potential in addition to the organisation's; the organisation's environment that cultivates fresh thinking values, continuous and cooperative learning; and collective action in detecting changes and sharing knowledge so as to produce new products or services (Senge, 1994; Watkins & Marsick, 1993).

A school as a learning organisation, does not only put priority on students, but is also comprised of teachers, professional community members with the opportunity to collaborate with and learn from each other. Educators are seen as the most valuable source in a learning organisation such as schools. Without educators, schools cannot function effectively because educators are the ones who mold students with their experiences and skills. Based on literary research, the two factors that influence students' success is the quality of their teachers (*Kajian Antarabangsa Pengajaran dan Pembelajaran* 2013, 2016) followed by the quality of leadership in schools (Kementerian Pendidikan Malaysia, 2013; Luyten, Scheerens, & Sleegers, 2012).

Subsequently, the Malaysian Education Development Plan (PPPM) 2013-2015 put forth Shift 4, which is: transforming the teaching profession into a choice

profession. One strategy of the Ministry is to start the Continuing Professional Development (CPD) programme that has been implemented since 2013. The programme aims to enhance teachers' knowledge and professionalism practices to ensure they are always up to date and following individual needs throughout their tenure. Through this programme, teachers receive guidance from a vast network of colleagues, including counsellors, senior teachers and principals/headmasters, to spread the best practices. This strategy is in line with the learning organisation concept (Muhammad Faizal & Crow, 2013; Pedder & Macbeath, 2008; Senge et al., 2000; Senge, 1994).

An effective school is not only equipped with infrastructure but also presses on teaching, learning and curricular aspects (Ramlan, Ahmad, & Wan Rashid, 2009). Therefore, the Ministry of Education in PPPM 2013-2025 outlined Shift 5: guaranteeing there is high-performance leadership in each school. This is based on the rationale that principals and headmasters who focus on instructional leadership can increase students' success rate by 20%. This notion is supported by the opinion that instructional leadership is related to students' success (Hallinger, 2011; Valentine & Prater, 2011; Hallinger & Heck, 1998; Hallinger, Bickman & Davis, 1996). As clarified by Shift 5, the tier of success measured by the foundation of leadership in each school which must be strengthened by developing and making administrators such as senior teachers, senior subject teachers and committee heads as teaching leaders.

II. PROBLEM STATEMENT

A principal's role as a teaching leader is a factor in students' success (Baharom & Mohamad Johdi, 2009; *Kajian Antarabangsa Pengajaran dan Pembelajaran 2013*, 2016). However, intermediate leaders at schools also play a key role in encouraging learning (Seong and Ho, 2012). Intermediate leaders at schools include assistant principals, senior subject teachers and committee heads, all of whom have the responsibility to lead all teachers under their respective departments to safeguard the quality of teaching and learning (Shaked & Schechter, 2016).

In 2011, the Higher Education Leadership Academy (AKEPT) conducted a study on the quality of teaching and discovered that 50% of what is taught is not delivered effectually. Students are not actively included, wherein teachers prefer to employ the lecturing method in delivering the content of the subject. Teachers are more focused on ensuring that students understand the basic content of a subject instead of higher-level thinking skills. With regard to that, schools, like trading companies, have to explore new methods of managing and exploiting intellectual assets within their teachers. Although the core business of schools is learning activities, and many learning activities occur among students, but among teachers, learning activities are scarce (Ramlan Zainal Abidin, Ahmad Esa & Wan Mohd Rashid Wan Ahmad, 2009).

There has been more awareness on how important it is for learning among teachers to happen informally while they are on the job. Learning takes place whether in groups or in dialogue form, and this must be supported by the workplace environment and culture. Workplace environment and culture can be built by the leaders and teachers with more experience in creating a conducive surrounding that supports the fulfillment of collective goals (Marsick & Watkins, 2003). Hence, to realise the learning organisation in schools, change is more effective when there is coordination and cooperation among the staff, especially by taking into account the role played by intermediate leaders in the process of generating a learning environment and culture (Barton & Ambrosini, 2013).

Instructional leadership is considered the engine of the formation of a learning organisation (Chan, 2004). Based on that rationale, this study aims to look into the relationship between the instructional leadership of senior subject teachers (GKMP) and the learning organisation in the context of secondary schools. Referring to questions and issues that have been raised, the study's primary focus is to identify the level of GKMP's instructional leadership practices and the level of learning organisation practices in the relevant state. The study also has the goal of identifying the contribution of GKMP's instructional leadership toward the learning organisation in secondary schools.

III. RESEARCH OBJECTIVE

Specifically, this study intends to delve into the relationship between the dimension of GKMP's instructional leadership and the learning organisation in secondary schools.

IV. CONCEPTUAL RESEARCH FRAMEWORK

In this study, the researches use the instructional leadership model of Hallinger & Murphy (1987) to explain the instructional leadership of GKMP. The model put forth three dimensions of the role of instructional leadership, which are: i) defining the School Mission; ii) managing the Teaching Programme; and iii) creating a positive learning environment. All three dimensions are further elaborated upon with 10 functions that teaching leaders at school must show.

The first dimension, defining the school mission, is made up of two functions, namely: F1 – crafting solid goals, and F2 – delivering those goals clearly. The second dimension, managing the teaching programme, requires actions that necessitate GKMP working directly with teachers within their departments. The functions of duties within the management of teaching programmes dimension are F3 – supervising and evaluating teachers' teaching, F4 – standardising the curriculum and F5 – overseeing students' academic progress. The third dimension in the Hallinger & Murphy (1987) instructional leadership model is creating a positive learning environment in which GKMP bear the responsibility of cultivating the teaching and learning

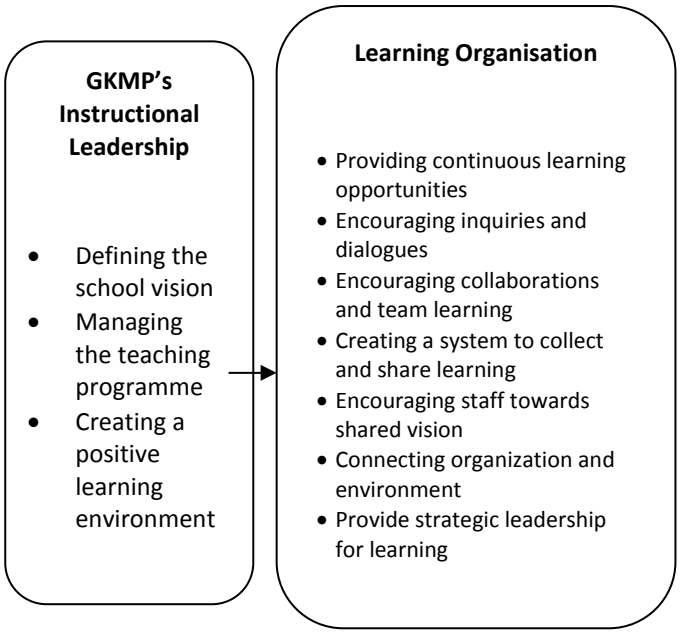
environment, namely the norms and attitudes of the teachers and students which can influence teaching and learning. It encompasses the following functions: F6 – protecting teaching times, F7 – maintaining visibility, F8 – providing incentives for teachers' efforts, F9 – making staff development into a culture and F10 – rewarding students. As a result of this framework, Halliner & Murphy (1987) built a set of questionnaires on instructional leadership *(Principal Instructional Management Rating Scale*, PIMRS).

Learning organisation is further explained using the learning organisation model by Watkins and Marsick (1996). According to this model, learning organisation exists at individual, group, organisation and global (community) stages. There are seven dimensions which have been identified:

i) Providing continuous learning opportunities;
ii) Encouraging inquiries and dialogues;
iii) Encouraging collaborations and team learning;
iv) Creating a system to collect and share learning;
v) Enabling staff toward the fulfillment of a common vision;
vi) Connecting the organisation with its environment; and
vii) Providing strategic leadership for learning.

The dimension which aims to provide continuous learning opportunities and encourage inquiries and dialogues is the dimension that frequently occurs at the individual stage. Learning takes place when an individual acquires and applies the necessary knowledge, attitude and skills to respond better. The dimension that encourages collaborations and team learning occurs at the group stage. At the organisation stage, the learning organisation is more easily seen via the dimension of creating a system to collect and share learning and the dimension that enables staff toward the fulfilment of a common vision. The dimensions of connecting the organisation with its environment and providing strategic leadership for learning typically take place at the global stage, or the State Education Department/Malaysian Ministry of Education. Based on this model, Watkins and Marsick (1996) made the questionnaire 'Dimension of Learning Organizational Questionnaire' (DLOQ).

The conceptual research framework shows the connection between the three dimensions of instructional leadership and their relation to the learning organisation, which has seven dimensions. The framework is based on the instructional leadership model by Hallinger & Murphy (1987) as a free variable and its link to the learning organisation model by Watkins & Marsick (1996) as a bound variable. The framework also depicts the relationship between the instructional leadership of GKMP and the learning organisation as per the figure below.



V. RESEARCH METHODOLOGY

The study is a quantitative study with a descriptive correlational study design. Data is collected by way of observation, using a questionnaire targeted towards a sample group for the purpose of identifying trends, behaviours, opinions or characteristics of the population (Creswell, 2012). The study was conducted on 400 teachers at secondary day schools in the state of Perak, chosen at random in two stages according to the locations of the schools, whether in the city or in the suburbs.

To measure the GKMP's instructional leadership, the questionnaire instrument was adapted from Hallinger's 'Principal Instructional Management Rating Scale' (PIMRS) (2000), and also modified from Zamzam's (1999) instrument. This is because Hallinger's (2000) PIMRS, with its three dimensions and 10 functions, is tailored specifically to measure the instructional leadership of principals or headmasters. The modification on Zamzam's (1999) instrument was done because that particular instrument was built to measure the instructional leadership of GKMP with three dimensions but still using 11 functions. With that being said, the questionnaire instrument was built to measure the construct of GKMP's instructional leadership with dimensions that cover the following aspects: (a) defining the school mission, (b) managing the learning programme and (c) creating a positive learning environment. On the other hand, to measure the learning organisation construct, the study employed the 'Dimension of Learning Organization Questionnaire' (DLOQ) that was crafted by Watkins & Marsick (1996) based on seven dimensions: (1) providing continuous learning opportunities, (2) encouraging inquiries and dialogues, (3) encouraging collaborations and team learning, (4) creating a system to collect and share learning, (5) enabling staff toward the fulfillment of a common vision, (6) connecting the organisation with its environment and (7) providing strategic leadership for learning. Each item is followed by five answer choices as per the Likert scale.

On the analysis of probabilities, both instruments had Chronbach values of .983 and .976.

VI. RESULTS

In this study, the researchers utilized the Pearson correlational analysis to identify the relationship between the dimensions of GKMP's instructional leadership and the learning organisation at secondary schools. Research findings are as shown in Table 1.

Table 1: Relationship between the dimensions of GKMP's instructional leadership and the learning organisation at secondary schools

Relationship	Learning organisation		Strength of the relationship
	r	Sig.	
Defining School Mission	0.585	0.000	Medium
Managing the Learning Programme	0.609	0.000	Medium
Creating a Positive Learning Environment	0.674	0.000	Medium
Overall	0.670	0.000	Medium

The findings in Table 1 show that there is a positive and significant relationship between the dimension of defining the school mission and the learning organisation, with the value r = 0.585 and sig = 0.000 ($p<0.05$). The strength of this relationship is medium. It signifies that the more enhanced the dimension of defining the school mission, the more enhanced the practices of the learning organisation. The dimension of managing the learning programme also indicates a positive and significant relationship with the learning organisation at the value r = 0.609 and sig = 0.000 ($p<0.05$). The strength of the relationship is medium-positive. This means that the more enhanced the dimension of managing the learning programme, the more enhanced the practices of the learning organisation. Last but not least, the dimension of creating a positive learning environment also shows a positive and significant relationship with the learning organisation, with the value r = 0.674 and sig = 0.000 ($p<0.05$). The strength of the relationship is medium-positive. Again, it shows that the more enhanced the dimension of creating a positive learning environment, the more enhanced the practices of the learning organisation.

As a whole, it can be concluded that there is a significant relationship between GKMP's instructional leadership practices and the learning organisation, wherein r = 0.670 and sig = 0.000 ($p<0.05$). It means that GKMP's leadership practices possess a strong, positive relation to the learning organisation, which is that the more enhanced GKMP's instructional leadership practices, the more enhanced the learning organisation practices are at schools. These findings imply that should GKMP increase their instructional leadership practices, the learning organisation will also tend to do so. As such, the learning organisation can be predicted based on the level of GKMP's instructional leadership practices.

VII. DISCUSSION

The findings of this study show that there is a significant relationship between GKMP's instructional leadership and the learning organisation at schools. This means that when the GKMP's instructional leadership is enhanced, the learning organisation at schools is also enhanced. The findings also indicate that the three dimensions of instructional leadership showcase a significant and positive relationship with medium-level strength. The dimension of creating a positive learning environment shows the highest significant positive relationship with the learning organisation, followed by the dimensions of managing the teaching programme and defining the school mission. These findings correspond with Chan's (2004) study which provides that instructional leadership plays a key role in building a learning organisation.

Although the findings have proven the existence of a medium positive relationship between GKMP's instructional leadership and the learning organisation, GKMP's instructional leadership practices have to be focused on because past studies by scholars have verified the importance of instructional leadership in improving the learning organisation (Silins & Mulford, 2002; Fitzgerald & Gunter, 2006; Melville, Bartley, & Weinburgh, 2012; Leithwood, Patten, Jantzi, 2010; Nor Foniza & Mohd Izham, 2013; Yusof & Fadzlon, 2011 dan Chan, 2004).

Overall, teachers have the perception that GKMP's instructional leadership is related to the learning organisation. This paints the picture that GKMP have conducted instructional leadership practices and in doing so, have affected the learning organisation through dimensions endorsed by Hallinger & Murphy (1987), which is defining the school mission, managing the teaching programme and creating a positive learning environment.

In the context of this study, it is evident that GKMP have the ability to enact instructional leadership well and become a good example to other teachers, on top of facilitating professional learning within teachers. This can be achieved when GKMP, in their instructional leadership practices, prioritise the dimension of creating a positive learning environment (Melville, Bartley & Weinburgh, 2012).

VIII. CONCLUSION

This study shows that GKMP's instructional leadership has a positive and significant relationship at the medium level with the learning organisation at schools. The improvement of instructional leadership should consequently improve the teachings of teachers and increase students' achievements as a whole. By conducting tests empirically, using GKMP instructional leadership and learning organisation instrument within

the secondary school population in Perak, this study has indirectly contributed to the knowledge of the level of GKMP's instructional leadership practices and the learning organisation from the perspective of teachers. The findings of this study are aligned with the recent study by Bush, (2013); Wan Roslina, (2011), which is on GKMP's instructional leadership and the study by Rosnah, Muhammad Faizal & Saedah (2014); Muhammad Faizal et al., (2014) on the learning organisation at schools. GKMP must also act as mentors and exemplary models to their teammates in ensuring the best practices are carried out during the learning process in the classroom, subsequently encouraging collaboration in groups. Most importantly, GKMP must be able to create a positive learning environment so as to increase learning organisation practices at schools.

From the study, the significant positive relationship between the GKMP's instructional leadership and the learning organisation imply that the programme enacted by the Malaysian Ministry of Education to increase instructional leadership among GKMP via Shift 5 of the PPPM was successful in revealing the concept and role of teaching leaders within the context of Malaysian schools. The success of Shift 5 is measured when the foundation of leadership in every school is strengthened by the development and capabilities of the assistant principals, GKMP and committee heads to practice instructional leadership. GKMP appointed at schools have taken the initiative in conducting instructional leadership practices as part of their duties as leaders. Therefore, courses and trainings on instructional leadership among GKMP should be continued by the PPD, JPN and KPM. This advice is further supported by the finding that such leadership is also impactful on the development of teachers' leadership, considered by other researchers to be directly correlating to students' performance.

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21st Century Learning is Not Merely ICT

Yusniza Binti Mohamad Yusof

ABSTRACT - **Truancy Symptoms are often associated with the uninteresting teaching and learning methods. Students do not like being under-control. Conventional teaching practices with 'chalk and talk' are no longer relevant. The 21st Century Learning or PAK 21 has been introduced. Even so, many still think that PAK 21 is the application of ICT as a teaching tool. The applications are said to be limited because teachers will somehow feel burden to provide learning aids due to various constraints of ICT problems in school. As a matter of fact, PAK 21 is not focused on ICT usage alone. ICT is not a barrier for applying PAK 21 in teaching method everyday. The focus of PAK 21 is 4Cs' 1V which is to develop creativity, critical thinking, team work and communication skills. Considering Malaysian elements, the moral value is one of the added value benefited from this system. Hence, group activities are the best method to produce a 4Cs' 1V characteristic students. Therefore, the objective of this document is to emphasis the fact that PAK21 is not bound by ICT application alone. Observation and survey have been carried out to evaluate the issues. Based on the observation and survey results, it can be concluded that teachers, as well as parents are still confused about PAK21. They assumed that PAK21 is the application of ICT in PdPc, hence, without ICT, PAK21 will not be implemented. The internet speed has always been one of the factor being pulled as the main constraint that disabled the system from being implemented. Consequently, these factor will limit the realisation of PAK21. Teachers are required to be more creative in order to create the learning content that suits with the level of ability of the students. Therefore, PAK 21 is not merely ICT usage. The essential intention is to create human capital that can compete on the real platform in the era of globalization.**

Keywords: **PAK21 vs ICT**

I. INTRODUCTION

21st Century learning or more synonymous with PAK 21 has been introduced widely. It's not something new among educators, parents and students. It has been widely disseminated and practiced in most schools. The school began to change the environment of the school area as well as indirectly encouraging the method of the class control at the assembly. Learning atmosphere in the classroom is changing and has become more colorful with interesting learning aids. Now it can be seen that the announcement board are filled with student's artworkz. Teachers are also brought to observe the implementation of PAK21 at the pilot schools. Based on the exposure, teachers will be able to apply the knowledges gained to their own school.

PAK 21 focuses on a more systematic class control system. The traditional teaching system is no longer relevant. PAK 21 introduces traffic light system and hand signals for student management and feedback. The traffic light system uses 3 colors on the card, the green color to understand, the red color to not understand, the yellow color to less understand. However, this method can be replaced with a hand signal. The use of this traffic light can actually be modified for other uses such as for any queries.

In addition to promoting a more systematic class control system, PAK 21 emphasizes four key features in the 21st century classroom that are communication, collaborative, critical and creative thinking. Only through group activities, these four things can be implemented and therefore, student activities such as 'pop corn', 'gallery walk', 'think pair share' and many more are introduced. Teachers can practice the activities of these students according to the suitability of the various student capabilities. What matters is that students are required to communicate, collaborative and creatively generate ideas with critical thinking.

In addition, informative school environments are also needed to support the practice of PAK 21. Special rooms are provided and furnished according to the needs. Classroom and material presentations are dynamically developed inside and out of the classroom with students as co-leaders or leaders. Table layouts and chairs in the classroom are also renovated to be in the ideal position for group activities. Schools and teachers need to plan student rankings in line with the space and number of students in the classroom. Students can be placed in group positions estimated at 4 to 6 members in one group. The number of members must be appropriate to the activity and each member is assigned to their respective roles either as a group leader, recorder, watchdog or presenter. Group divisions can be divided according to the level of the student's ability.

II. PROBLEM STATEMENT

The teacher's pedagogical skills are necessary to ensure this PAK 21 culture becomes a reality. Teachers need to have teaching innovation skills, information skills, media and technology (information, media and technology skills) life and career skills. Therefore, teachers need to

implement student-based learning, collaborative learning and high-level thinking skills. Teachers need to teach students in the current era by giving opportunities to highlight the potential and talents of students. Teachers play a role in providing learning aids that can be utilized in the classroom and should help students in generating knowledge that is communication skills and thinking skills. Teachers actually need to be passionate in pdpc to implement all of these criterion.

Many think that the application of ICT at crucial tool will limit the implementation of PAK 21. The limitation of equipment and material preparation using ICT are another the reason. Thus the creation of PAK 21 is considered to be failing and the objective is not achieved.

The ICT usage may be a bonus for teachers and students. Apart from an easy access to information and technology, the effort of finding material or presentation is very minimal. It is also contribute to energy and time savings.

Although, it is understandable that not all schools can provide ICT facilities due to the cost especially to schools that are located in rural areas. Also, not every students are afford to own the equipment and facilties at home. Not to mention, even with complete ICT facilities, the internet speed and other hardware problems could also contribute to the showstopper. Teachers, also need to follow the recommended schedule.

Common reason from teachers is that the preparation of ICT equipment takes a long time and sometimes interferes with the teaching and learning period. Therefore, they rarely choose to use ICT as a learning aid. They are comfortable with the old method. This is what has been emphasized in the objective of this paper work. This paper attempts to change perceptions and a true understanding of the implementation of PAK 21's culture which is not only focused on the use of ICT in the classroom alone. Everyone needs to know ICT is just a teaching tool to facilitate teacher work with students, making teaching and learning easier and more interesting. It is not a factor to realize the class characterized by PAK 21. Understanding of what is intended in the implementation of PAK 21 is very important so that its implementation is not considered to be burdensome and does not make any change. Teachers should be wise to use ICT facilities and place them in the proper place to produce ICT-literate students.

III. METHODOLOGY

Throughout coaching with teachers, many discussions took place regarding teaching and learning in the classroom. In addition to the way the objectives of writing and the lesson plans discussed, student activity is a popular discussion topic. Many teachers only do activities which are instructional but have no impact, no focus, no time control and no focus on student's ability level. There are still many who say PAK 21 is ICT and ICT is PAK 21. Therefore, let's take a look at the results of the study.

Observation and survey has been conducted throughout the introductory period. Feedback directly or indirectly are collected. First, title is selected. Then, the online interview method is carried out. Questions related to the title have been posted on 'whats app' to get the most feedback. Various opinions and ideas are recorded. Opinions received are among parents. However, the answers received do not give a clear picture of the selected title.

Hence, a questionaire was developed using the google form with the title Study in the 21st Century Learning Ceremony at the school. Objective of the questionnaire is to find feedback and suggestions for the topic. Respondents consisted of teachers, parents, students and others. Total of 113 respondents have answered the questionnaires. There are 5 questions available in the form of yes or no answer choices. There is a question that gives the respondent an opportunity to comment, comment or any suggestion. This study was sent to respondents through 'whats app', 'telegram', 'messenger' and 'facebook' media either individually or in groups. Here's a list of questions that have been provided in the study:

No.	Questions
1	Have you heard about 21st Century Learning ? ☐ Yes ☐ No
2	Have you heard about 21st Century Learning ? ☐ Yes ☐ No
3	Do you know about 21st Century Learning ? ☐ Yes ☐ No
4	Is learning 21st Century is the use of ICT in teaching and learning ? ☐ Yes ☐ No
5	If there is no ICT usage in teaching and learning 21st Century Learning can not be implemented ? ☐ Yes ☐ No
6	Do you agree with the 21st Century Learning ? State your opinion. _____ _____ _____ _____

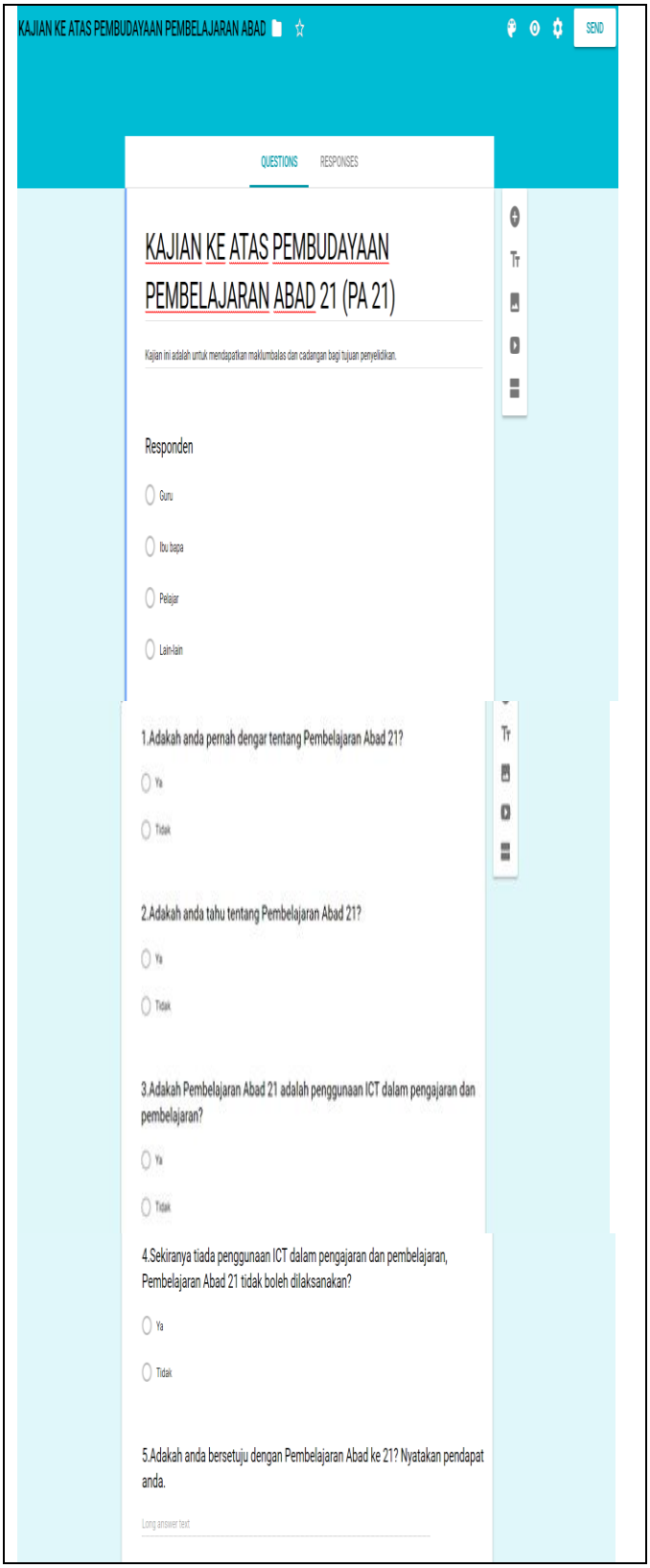

Figure 1: A Questionnaire Developed Using A Google Form

IV. IMPACT / ACHIEVEMENTS

113 respondents have answered the questionnaires. Thank you all who have responded. Respondents consist of teachers, parents, students and others.

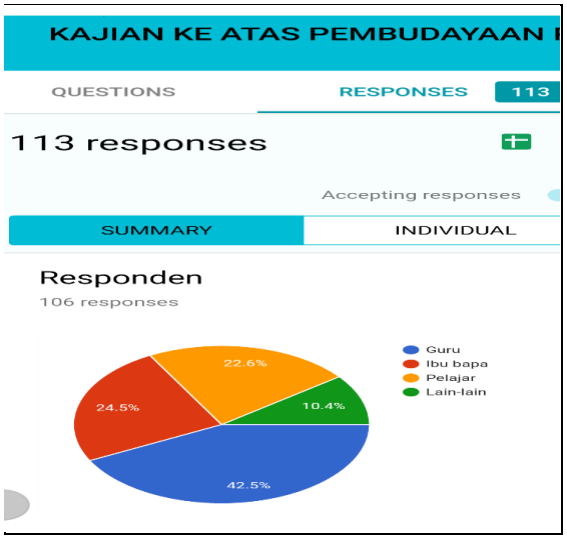

Figure 2 : Number Of Respondents Who Responded

From the 113 feedback received, only 106 respondents answered the question. 42.5% are teachers, 24.5% are parents, 22.6% are students and 10.4% are others.

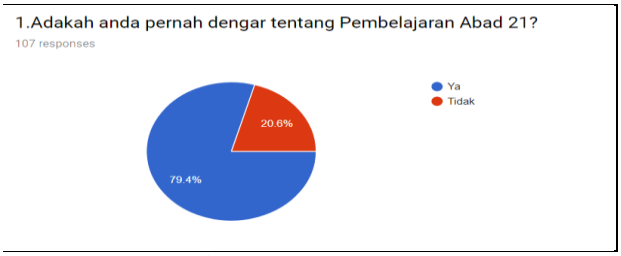

Figure 3 : Number Of Respondents Who Responded To Question 1

A total of 107 respondents answered the question 1. A total of 79.4% of respondents had heard and 20.6% of respondents had never heard about PAK 21. Most who had never heard about PAK 21 consisted of parents and non-parents. Teachers and students are exposed to PAK 21 at school.

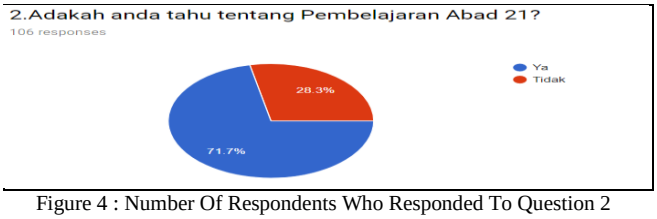

Figure 4 : Number Of Respondents Who Responded To Question 2

A total of 106 respondents have answered this question. As many as 71.7% of respondents know and 28.3% of respondents do not know about PAK 21. Most exposed by PAK 21 are teachers and students. Only a few parents and others understand this PAK 21.

Figure 5 : Number Of Respondents Who Responded To Question 3

A total of 107 respondents have answered this question 3. 64.5% of respondents agreed and 35.5% of respondents disagreed that PAK 21 was the use of ICT in teaching and learning. Respondents who agree with this question consist of teachers, parents, students and others. While the disagreement also comprises the same category respondents.

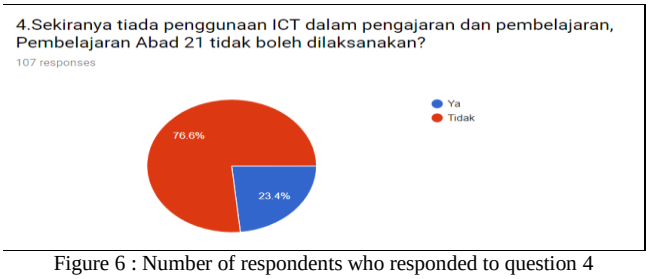

Figure 6 : Number of respondents who responded to question 4

A total of 107 respondents have answered this question. A total of 76.6% of respondents agreed and 23.4% disagreed that PAK 21 could not be implemented without the use of ICT in teaching and learning. Respondents who agree with this question consist of teachers, parents, students and others. While the disagreement also comprises the same category respondents.

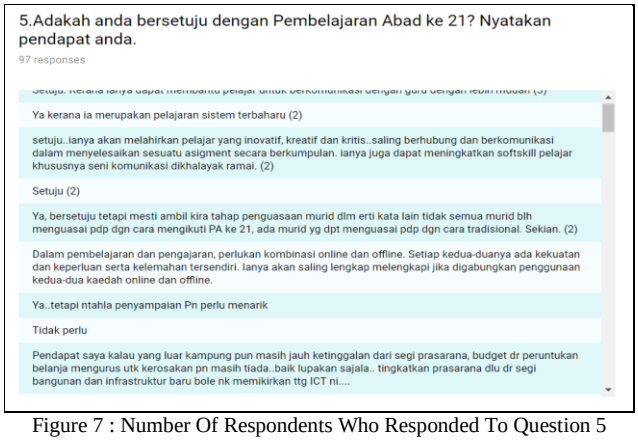

Figure 7 : Number Of Respondents Who Responded To Question 5

While for this fifth question, 97 respondents have given their opinion. Most respondents agree because they know about the advantages and disadvantages of this PAK 21 culture and those who are disagree not because they do not understand the advantages but because of the constraints in ICT usage.

From the studies conducted on observations and interviews directly or indirectly, it is clear that there is still confusion among teachers, parents, students and other respondents on the use of ICT in this PAK 21. Referring to question 3, 64.5% of respondents agreed that PAK 21 is the use of ICT in teaching and learning but referring to question 4, 23.4% of respondents say PAK 21 can not be implemented if there is no ICT usage in teaching and learning.

This study also shows that PAK 21 is not a new thing in the education world as most teachers, parents, students and the public have learned about the implementation but still many do not know about this PAK 21 in overall. They think PAK 21 is related to the use of ICT in teaching and learning. Hence many feedback received is about the constraints on using ICT.

5.0 INTERNET FACTS IN MALAYSIA

Why this issue is so popular? Let's have a look at these facts.

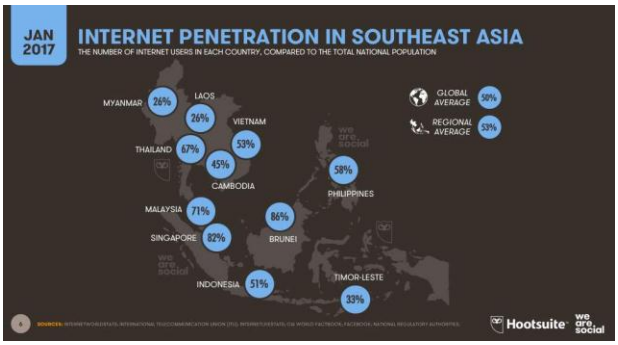

Figure 8 : Internet Penetration Percentage In South Asia

Based on the findings in journal dated 14th July 2017, open researched has been made between Open Technology Institution, Googles and Planet Lab of Princeton University resulted that the coverage of Internet has not gone well in Malaysia specifically. We are at the 3rd place after Singapore and Brunei.

Figure 9 : Asean 6 digital population 2018.

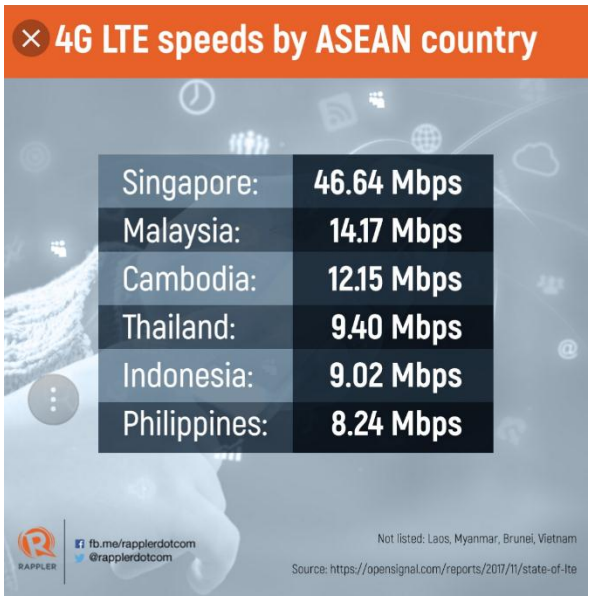

Figure 10 : Internet Speeds by Asean Country.

Based on the internet speeds by asean country as above, internet speed in Malaysia is only 14.17 mbps in which we are the no 2 in Southest Asia. For examles, the Singaporean needs 18 minutes and 34 seconds to download a Hindustan's film while Malaysian needs 2 hours and 33 minutes to do the same process.

So that due to the issues, the government is working together with private company, GLC to enhance the problem. It is a must-do in our digital era. It is proven that, the usage of ICT is not compulsory in our 21st century learning program.

V. CONCLUSIONS / IMPLICATIONS

Most people still do not understand what is the 21st century learning is all about. They assume ICT is the main course to generate 21st Century Learning and without ICT, the 21st century learning is not a reality.

PAK 21 is meant to create a very well disciplined student with systematic class control, to create a meaningful environment in school. Most importantly is to produce well-versed human capital in terms of communication, thinking skills and teamwork.

ICT is a tool to improve teaching and learning techniques. In fact, the constraints on the use of ICT do not affect the development of this PAK 21. What can be done is to improve ICT needs as it helps in improving the quality of teaching and learning because we are in a technological age that requires our students to compete with the latest technology advancement.

Hopefully, with this study, it will give the public an understanding of the linkages between ICT usage with PAK 21. Not all tasks are the same, different tasks encourage different levels and types of thinking. The level of thought in which activity that pupils engaged with will determine their level of learning. Teacher pedagogy is enhanced to create creative, innovative, quality and competitive human capital because 21st learning is not merely ICT.

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