

# Eliciting Tacit Knowledge from Special Education Teachers

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## ABSTRACT

Children are national precious asset whether they are normal or special. In this paper special children refer to children with learning disability. Children with learning disability usually have problem in understanding instruction during their learning process. Therefore, they require experienced and well trained teacher to teach them because they can deal with their special needs and ability. However, the valuable knowledge on how to teach these children usually remains tacitly in the mind of the teachers. Therefore, this paper tries to elicit tacit knowledge from special education teachers for the purpose of knowledge sharing. Storytelling and scenario method were used to capture the tacit knowledge from five special education teachers. As a result, tips on effective teaching has been identify based on the situation. The result can be shared among new teachers, researchers and also can be consider in designing courseware for children with learning disability.

**Keywords:** Tacit Knowledge, eliciting, scenario, storytelling.

## I. INTRODUCTION

According to Polanyi (1967) and Nonaka and Takeuchi (1995), there are two types of knowledge namely tangible knowledge and intangible knowledge. Tangible or in other word, explicit knowledge can be viewed significantly such as books, manuals, articles and more. Meanwhile intangible knowledge is known as tacit knowledge because they are not visible and cannot be adequately articulated by writing it down or verbal means. This kind of knowledge is embedded in the thought of people, e.g. experts who gain knowledge from their experience, try-and-error or monitoring of particular domain. The term of tacit knowledge was introduced by Michael Polanyi.

Polanyi quoted that “we know more than we can tell” was describing tacit knowledge (p.4). Most likely, experts can only reveal their knowledge through practice to solve the problem rather than explaining it. This research recognized that teachers (*expert*) are able to recognize the students’ problem and manage to solve it in practice; however they are unable to articulate adequately through verbal or writing how it was done.

This paper will also discuss how to elicit the tacit knowledge of special education teachers since they are an important element in the teaching and learning process. In teaching and learning process, students (*receiver*) act as knowledge receiver and teacher (*presenter*) as a knowledge presenter. A teacher will deliver her knowledge in various methods according to the type of students. For example children with learning disability are easily attracted to something interesting and creative; therefore teacher will act according to the student’s needs. Being creative, does not derived from reading alone. It is a practical process in making decision whether it works or not during the teaching process. Methods of teaching are adjustable according to the needs and effectiveness. Based on individual’s creativity, they can justify it due to the current situation and the student’s needs. In consequence, it will give knowledge to the teacher and become part of their self learning process.

There are a variety of experimentations and techniques in dealing special students besides common teaching experiences. The main problem in teaching and learning process is storing and retrieving tacit knowledge from retired teacher. The knowledge and experience that they have are stored in their mind and unrecorded in any form of storage. Therefore, for a new teacher, they need to start the self learning process from start as what their retired teacher did before. In consequence, they wasted their time doing the same task and unable to discover a new improved method of teaching. If this kind of process continually happens, progress of the education system will be slow.

The objectives of this paper are to identify the tacit knowledge of special education teachers and to elicit the tacit knowledge among these experienced

teachers in educating children with learning disability.

## II. LITERATURE REVIEW

Tacit knowledge can be revealed in various methods. The most common methods are interview and observation. However, this research will use storytelling and scenario methods. Before further discussion, the paper will describe a little bit about Special Education.

### A. Special Education

The Malaysia Ministry of Education's Special Education Program (*Program Pendidikan Khas Kementerian Pendidikan Malaysia*) was introduced to meet the needs of special students education. Special education began in Malaysia since the early 1920s among the volunteers who open schools for students with visual and hearing disability. While the program for children with learning disabilities started in 1988. Implementation of Education Policy which is reviewed by the Cabinet Committee Report (1978) through Recommendation 169 was the turning point that led to the emphasizing and focusing clearly on the development of Special Education in Malaysia (Jamila, 2006). Special Education Program was divided into three categories that are for children with learning, hearing and visual disabilities. For learning disabilities, it includes slow learners, Autistic, Down syndrome, Cerebral Palsy, hyperactive and many others.

### C. Interview

Interview is one of traditional approaches to reveal tacit knowledge and it can be classified to unstructured, semi-structured and structured interview. Most common type of interview is structured or standardized interview. This approach is used in quantitative research to ensure that each interview is presented with exactly the same questions in the same order. It will minimizing the impact of context effects, where the answers given to a survey question can depend on the nature of preceding questions. To deal with the inadequacy of interview techniques, Alvarez (2002) suggested Critical Discourse Analysis (CDA), to overcome disadvantages of the interview technique namely response biasness. Instead of CDA, there is other similar method known as Critical Decision Method (CDM). According to Millitello and Lim (1995), CDM is used to elicit expert's knowledge, decisions strategies and cues attended to, and system in naturalistic decision making environment. This method

needs the informer to describe and explain in detail every single moment or decision that involve their expertise.

### D. Observation

According to Ellen Taylor-Powell (1996), key elements of observation are "seeing" and "listening". This method introduces documentation of activities, behaviour and physical aspects without having to depend upon people willingness and ability to respond to the questions. There are two types of observation which are participant and non-participant. Participant observation is conducted when the researcher participate in the activities of the respondent group. Meanwhile, passive observer is participant observation which will not involve the researcher in the activities known as non-participant observation. The appropriate observation is conducted in four conditions namely (a) when researcher want direct information, (b) when researcher are trying to understand an ongoing behavior, process, unfolding situation or event, (c) when there is physical evidence, products or outcomes that can be readily seen, (d) when written or other data collection procedures seem inappropriate (Ellen Taylor-Powell, 1996). The disadvantage of this method is the presence of the observer may influence the phenomenon itself. In other words, those subjects who are being observed may change their activities in the presence of the observer. As a result, the observer may fail to obtain a true picture of subject's behaviors.

### E. Storytelling

According Olivier Serrat (2008), storytelling is about ideas, beliefs, personal experiences and life lessons experienced by someone who presented through storytelling that evoke powerful emotions and insights. Storytelling is an informal method to elicit tacit knowledge. Intention of storytelling is to distribute knowledge to tell a complete story of about how an incident occurred, not to identify or to define data and information. Storytelling will encourage the teachers to narrate their attitudes and memories in storytelling manner.

### F. Scenario

Scenario method is a strategy that is grounded in the assumption that tacit knowledge can best be explicated by provoking domain experts to act and apply their knowledge and skills to solve novel or a typical problems. Scenario method can be described, (a) to accomplish a particular task, depicts a sequence of distinct actions that might be taken and (b) details the sequence of interactions – comprising exchange of message and response to intermediate outcome – fulfill the goal, performed or experienced by entities.

### III. METHOD

There were two phases in this research. The first phase is preliminary study that requires the researcher to understand the situation such as the scope of the study. The method used is interview method that is conducted in three parts. First part is asking the current teaching practice performed by teachers among special students. The second part is about the teaching tips. This part asked the tips being used by teachers to teach these students. While the third part is suggestion of courseware needs. This section asked, if there is a courseware to be developed, what teachers suggestions about the courseware. It is more on the characteristics of courseware to be developed. List of questions are shown at Table 1.

**Table 1 Preliminary Study Questions**

<p><b>Current Practice</b></p> <ol style="list-style-type: none"> <li>1. What are ages of the pupils in this class?</li> <li>2. What type of disability among the pupils in this class?</li> <li>3. What are the similarities that exist in these pupils?</li> <li>4. How can teachers meet requirements (teach) the pupils while they have different needs?</li> <li>5. What is being taught in this class?</li> <li>6. What are the objectives to be achieved at this stage?</li> <li>7. Do you follow the prescribed syllabus? Why?</li> <li>8. What is the most critical content in the syllabus prescribed?</li> <li>9. Is there a reference book used for teaching? If so, what are the reference books used in this class?</li> <li>10. Did you use any teaching aids to teach these pupils? If yes, please describe the teaching aids.</li> <li>11. Is the courseware used in teaching? If yes, please list them and what are the differences in each of the courseware.</li> <li>12. What is the evaluation method used to evaluate the student's performance?</li> <li>13. What are the problems they had encountered while teaching this class? And what action is taken to overcome this problem?</li> </ol> <p><b>Teaching Tips</b></p> <ol style="list-style-type: none"> <li>14. Normally, how long do the pupils focus on teaching and learning (P&amp;P)?</li> <li>15. What activity is provided when they lose their focus?</li> <li>16. What are the things that attract these pupils?</li> <li>17. What is the best way to attract their attention</li> </ol>
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<p>during P&amp;P?</p> <ol style="list-style-type: none"> <li>18. There is reward or fine levied at this student? Explain.</li> <li>19. What techniques / tips that are used to teach these pupils?</li> </ol> <p><b>Recommendation of Courseware Requirements</b></p> <ol style="list-style-type: none"> <li>20. If there is a teaching aid or courseware that will be developed, what features are compatible to attract these pupils' attention and understanding towards the subject teaching?</li> </ol>
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The second phase of this research is in-depth data collection of tacit knowledge. Storytelling and scenario method are used in order to meet key requirements of tacit knowledge eliciting method which are:

- i. Tacit knowledge that is learned by experience.
- ii. Theories of action may be different from actual practice.
- iii. Focusing on what actually happened in practice.

This research used storytelling methods in which respondents received the questions in the form of a scenario. Then they are required to answer them in a form of storytelling. In the preceding data collection session, the respondents were informed about the background of this research, the purpose of the data collection and the expectation.

The opening questions are basic scenario in teaching. This question is an introduction so that teachers are more calm and open to answer further questions. The reason for this action is to help them to refresh their memory of the situation as a context for the following questions and to establish a rapport.

The next scenario questions are about Bahasa Melayu teaching tips. The questions are still in the scenario form, so that respondents are able to remember every single moment they have gone through and what are the steps taken to overcome it. They are encouraged to tell the story in detail without interrupting. However, the interviewer should ask a question to the respondents during the session if they stop the narration; so that, respondents are able to recall the particular situation. The respondents need an encouragement and help from the interviewer to recall every single moment or situation so that they can give a complete scenario. Table 2 shows questions asked during the second phase.

**Table 2 In-depth Data Collection Questions**

1. Effective learning strategy is to potentially excite the students to learn actively, it also able to help analyze the concept or idea and be able to attract students and produce meaningful learning. So, for these pupils, what is an effective learning for them? What are the methods used by teacher to achieve the effective learning?
2. What teacher's action?
  - a. If pupil are losing focus during the period of learning.
  - b. If pupil has no mood on that day.
3. If the students have no knowledge on particular subject such as ABC, please explain the action or steps taken by teacher to help them.
4. If the repetition technique is unable to develop student understands on particular subject, what are the actions taken?
5. What are the problems they had encountered while teaching these pupils? Especially Bahasa Melayu subjects. Can teacher elucidate the situation? What action taken to overcome problem?
6. Bahasa Melayu is subject which teach these pupils about the literacy. So, what is the technique or tips used to teach Bahasa Melayu subject to these pupils?
7. What method or approach used to facilitate the pupil to know the literacy?
8. What are the tips that are used to enable learners to remember the alphabets that are taught?
9. What methods are used to facilitate learners to remember the lessons being taught, such as syllables?
10. According to the syllabus, pupils need to recognize alphabets, syllables, diphthongs, diagraph in order. So what method used by teacher so that this pupil quick to read without go through the order.
11. Mostly teacher used their own creativity when teaching Bahasa Melayu in order to attract the attention of student to learn this subject. So, please explain what kind of method that you use?

In this research, the case study focused on students of *Kelas Pendidikan Khas* at *Sekolah Kebangsaan*. The research is conducted among students with learning disability, including Down syndrome, Dyslexia, Autism and others. Participants of this research are experienced teachers which are specialized in special

education field focusing on teaching tips in the learning process of Bahasa Melayu among these disabled students.

However, observation method is not used in this research because the number of respondents is small and they might feel uncomfortable during observation.

#### IV. FINDING

The tips are then categorized by the appropriate attribute as show in Table 3. The data for Table 4 was grouped by the specific situation. Relative tips for each situation were identified. The findings in this research are illustrated in Table 3 and Table 4.

**Table 3 Preliminary Study Result**

Attribute	Tips
Concentration	<ol style="list-style-type: none"> <li>i. Times of concentration within 10-15 minutes.</li> <li>ii. Use interesting materials, but not too frequent.</li> <li>iii. Use different materials and different teaching techniques in every session.</li> <li>iv. Informal learning such as games, visiting, sing or else.</li> </ol>
Attraction	<ol style="list-style-type: none"> <li>i. Rewards will be given directly.</li> <li>ii. Materials are illustrated using bright colours.</li> <li>iii. Use something that student fancy such as car, cartoon, and fairytale.</li> </ol>
Easy to understand Bahasa Melayu	<ol style="list-style-type: none"> <li>i. Stressed on alphabets b, k, a, e, i, o, u. Because these alphabets will develop several words.</li> <li>ii. Focus on syllable.</li> </ol>
Other	<ol style="list-style-type: none"> <li>i. Repeat items that cannot be mastered by student.</li> <li>ii. Must not be forced.</li> </ol>

The result is based on the finding and final conclusion of interview conducted among teachers of *Kelas Pendidikan Khas*.

**Table 4 In-depth Data Collection Result**

Situations	Tips or methods
Effective learning	<ol style="list-style-type: none"> <li>i. Conduct induction session with pupil.</li> <li>ii. Level of education that is suitable with them.</li> <li>iii. Use picture card.</li> <li>iv. Recurring lesson or syllable like ba..ba..ba.. pa..pa..pa.. bapa.</li> <li>v. Rhythmic reading by using songs.</li> <li>vi. Give wage or reward.</li> <li>vii. Use lots of ICT.</li> </ol>

Losing focus during the period of learning	<ul style="list-style-type: none"> <li>i. Call her/his name and make she/he involve in the class.</li> <li>ii. Do stretching exercises.</li> <li>iii. Provides snacks to be given among the pupils.</li> <li>iv. Use same dialect as the pupils.</li> </ul>
No mood on that day	<ul style="list-style-type: none"> <li>i. Persuade her/him with what they like.</li> <li>ii. Make a promise with the pupil, after playing games in order to make them involve in the learning process.</li> </ul>
Gain control some lessons from nothing	<ul style="list-style-type: none"> <li>i. Teach 3 to 5 alphabets in a day. Imagine the alphabet and draw it in air.</li> <li>ii. Teach to write the alphabet repeatedly while pronouncing the alphabet.</li> <li>iii. Draw the alphabet in the salt or sand.</li> <li>iv. Colour the alphabet while saying out loud the sound of the alphabet.</li> </ul>
Teach recurring times but could not be remembered or not understood	<ul style="list-style-type: none"> <li>i. Give additional study materials to take home like picture card.</li> <li>ii. Meet their parents and asking them to monitor the students while studying.</li> <li>iii. Change the activity for the same syllabus.</li> </ul>
Bahasa Melayu teaching tips	<ul style="list-style-type: none"> <li>i. Writing sequentially in order to prevent confusion.</li> <li>ii. Relate an alphabet with things that exists like 'a-ayam' in the students' environment.</li> <li>iii. Look and read repeatedly.</li> <li>iv. Introduce vowel and the sound and followed by consonant letter that often used like b,k,l,m,n,p,r,s,t.</li> <li>v. Conduct storytelling technique using single picture and simple sentences.</li> <li>vi. Playing with alphabet card and syllable.</li> <li>vii. For syllables do not mention the alphabet that create the syllables, but</li> </ul>

	voicing the syllables sound like baju – 'ba' 'ju' not like baju – 'b..a..' 'j..u..'
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Both results are having differences such as in the first result; this research tries to understand the behavior of the children in general. While the second result, focus on the specific subject matter which is Bahasa Melayu.

## V. CONCLUSION AND FURTHER RESEARCH

In this paper, we have discussed about tacit knowledge eliciting approaches that attempts to capture tacit knowledge of special education teachers. Based on this research, the storytelling and scenario are found to be effective methods for eliciting tacit knowledge compared to interview method. This is because the data were collected using interview method is bounded by the questions being asked and respondent only answered the questions. On the other hand, when storytelling and scenario methods were used, respondents were more relax to respond to the questions and detail answers were given in a form of story. Moreover they could relate the scenario question with their experience.

Further research direction of this study is to develop teaching aids that embedding these tips and several elements according to the level of education of these children.

## ACKNOWLEDGMENT

This research was funded by Universiti Teknologi Malaysia.

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