

Sign Language Learning Assessment Model Framework for Special Education Teacher

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Abstract: The purpose of this study is to obtain expert consensus and views on the elements of the sign language learning assessment model for special education teacher students. This study uses the Fuzzy Delphi method by using likert 5 scales to collect feedback from 30 experts in the field of pedagogical sign language in Malaysia. A total of 4 main elements of the questionnaire were given to the experts for evaluation. The Fuzzy Delphi method has been used to analyze the data. The data were analyzed using triangular fuzzy number and ranking with each model element determined by the “defuzzication” process. Analytical results of expert agreement and expert consensus have reached a very good consensus. The elements agreed upon by the experts on consensus are arranged in order of importance, expressive and receptive judgments, interaction assessments and written assessments.

Keywords: Fuzzy Delphi, expert agreement, sign language learning assessment model, special education teacher students.

Sign language is one of the communication mediums that is important to the hearing impaired (Kincaid, 2012). The use of sign language facilitates communication to the hearing impaired people and gives them the opportunity to express their feelings, opinions, ideas, feelings and feelings (Kincaid, 2012). The uniqueness of the sign language can be seen when a form or a symbol of hand signifies something (Loughran, 2013). In addition, body language and facial expressions are attracting and intonation in the use of sign language (Wilbur, 2013). History of the beginning of the sign language in Malaysia was not identified but the development of sign language was formally identified when it began in the Federal Special Education School (SKPKP) which was part of the Federation of the Deaf Children School in 1954 founded by Lady Templer (Lim *et al.*, 2006). Even though at that point, the education system for students with hearing impairment was using oralism but the pupils continued to use sign language during school hours (Lim *et al.*, 2006). Then, a teacher and education fighter for hearing impaired students, went to the United States to learn hearing impaired people, sign language and culture there. Back to his homeland he has spread the American sign language to the hearing impaired people community and set up social associations and clubs to develop the GKUP community for 40 years until he was called deaf father in Malaysia (Lim *et al.*, 2006). Subsequently, in 1978 the Malay language code (KTBM) was introduced to help pupils with hearing impairment improve Malay language well (Yusoff & Mohamed, 2009). However, KTBM is not a language but it is a formulated and formulated hand code to facilitate Hearing Impaired people to learn Malay Language (Yusoff & Mohamed, 2009). This causes

deaf people to use a distinct signal of structure and the formation of their verses from the Malay language.

However, in schools, one of the main mediums of student communication is hearing impairment in teaching and learning is the use of sign language (Lim *et al.*, 2006). This can be seen in the presence of a subject of *Bahasa Isyarat Komunikasi* (BIK) which is used as a core subject in a special education school hearing problem with the aim of improving student communication skills of hearing loss by sign language (Kementerian Pelajaran Malaysia, 2010). Therefore, a special education teacher for hearing impaired students should master and exert themselves in communication using sign language because these skills need to be used in teaching and learning (Nor, 2010). Therefore, the language skills of sign language learning must be learned by students special education teachers before they are placed in special education schools with hearing impairments. In order to strengthen the students' skill in the sign language, a form of assessment has to be carried out. Therefore, a construction of sign language learning assessment model should be done by obtaining the validity and agreement of experts on the test elements which is necessary to have the validation done by selected and analyzed experts using the Fuzzy Delphi technique, so the question of whether this is the framework of the language learning assessment model for special education teacher students? This is to formulate a sign language learning assessment model for special education teacher students.

The Sign Language Education, Indeed, the language of sign language education should be learned by teachers since they are studying higher education (Yasin *et al.*, 2017). This skill must be mastered before this teacher will be placed in special education school

less However, to ensure that these teachers are really mastering the language of the signal well then the assessment should be done (Rashid & Meeze, 2015). Evaluation can be done either in the form of expressive, receptive, interaction and written assessment (Rashid & Meeze, 2015).

In addition, studies such as Haug & Mann (2007) divide two forms of assessment that can be done in the language of sign language learning which is a product-based assessment and an assessment of the form of understanding. Product-oriented assessments are valued in making signals through what's being heard and seen whether a cartoon plan, a children's storybook, a picture, and so on. While the assessment is in the form of understanding by viewing and communicating the signals seen through signals from hearing impaired, video shows, pictures and so on. Next, Enns & Herman (2011) divides two forms of English language sign language evaluation ratings which are evaluations of the mastery of the sign language and the mastery of verses based on sign language linguistics.

Haug (2012) has stated that sign language learning should be given the appropriate test of understanding. Two forms of understanding tests that can be done in the language of sign language learning are testing from the aspect of skill level and testing of understanding according to student's age level. The form of sign language tests that can be implemented is word mastery test, grammatical mastery, linguistic mastery and sentence formation (Haug, 2012).

According to Nelson, White & Grewe (2012) indicates that evaluation elements need to be applied in sign language learning but to attract and have a positive impact on the typical group to study it is to use online. This statement is supported by McKee & McKee (2013) saying that learning online sign language will make it easier for students to learn and explore. Even with the on-line assessment will make it easier for students to self-evaluate and facilitate instructors to conduct evaluations without having to deal with students (McKee & McKee, 2013).

METHOD

The Fuzzy Delphi method was introduced Siraj *et al.* (2013). In this method will produce an instrument (questionnaire) from the findings of the Delphi method (Siraj *et al.*, 2013). The Fuzzy Delphi method selected is because this method is a suitable method used to obtain the expert approval to produce a model. The respondents of this study consisted of 30 specialists consisting of 10 teachers with hearing impaired teachers in the teaching of sign language and 20 typical teachers of special education hearing problems with the teaching of students with hearing impairment.

There are 2 steps in the implementation of this method. The first step, the formulation of questionnaire forms is the result of interviews with 5 experts. From the interviews, 4 items were included in the questionnaire. In the second step, the questionnaire was distributed to 30 experts to answer the instrument.

Data Analysis, There are seven steps in analyzing the Fuzzy Delphi technique. Here are the steps of the Fuzzy Delphi technique used by the researchers:

Step 1: Determination of expert or number of experts involved (30 experts)

Step 2: Selection of linguistic scale (5 point scale)

Step 3: Get the average value

Step 4: Determine the value of 'd' (Threshold Value)

Step 5: Getting 75% Consensus

Step 6: Get Fuzzy Evaluation

Step 7: Defuzzification (Scoring process)

FINDINGS AND DISCUSSION

Findings

The findings of the study below will be discussed one by one based on previous studies.

The findings of the threshold value framework of the sign language learning assessment model for typical education teacher students

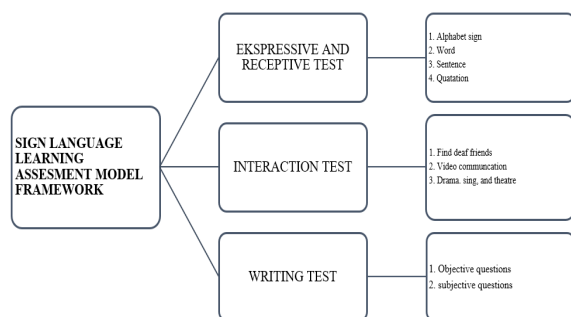
The researcher analyzed the data by using Fuzzy Delphi approach by step 3 to 7 to answer the questionnaire which has been stated. To see the degree of agreement between experts, the findings of the study for all items were analyzed by determining the distance between 2 Fuzzy numbers to determine the threshold value d . According to Siraj *et al.* (2013) states that in order to analyze the data, the distance between two Fuzzy numbers is calculated by measuring the average deviation between experts. Whereas the criteria to be used to assess the expert group consensus is based on the degree of consent that exceeds 75%.

In this study, the condition of one (1) has complied because the threshold value for most items is ≤ 0.2 , but only part of the item is ≥ 0.2 . However, the second condition (2) has also complied because the expert group consensus has exceeded 75%. The result of the total threshold value calculation ≤ 0.2 indicates that this threshold threshold exceeds 75% by recording 80% of the items in the framework of this module which encompasses 4 items. This shows the degree of agreement between experts has reached a very good concession. Therefore, the second round of fuzzy Delphi is not required because the data acquisition has complied with both conditions.

Table 1. A framework for sign language learning assessment model for special education teacher students

Item	Framework items	Fuzzy evaluation	Defuzzi-fication	Position
A 1	Writing test	(15.2, 21.2, 27.2)	0.706	3
A 2	Expressive test	(16.2, 22.2, 28.2)	0.74	1
A 3	Receptive test	(16.2, 22.2, 28.2)	0.74	1
A 4	Interaction test	(15.8, 21.8, 27.8)	0.727	2

Figure 1. Sign Language Learning Evaluation Model for Special Education Teacher Students



The findings of the Framework for Learning Model Sign Language Learning Assessment for Special Education Teacher Students

The analysis shows the findings of the Framework for Reviewing the Sign Language Learning Model for Special Education Teacher Students. In this study, there are 4 types of items that are agreed upon by experts in developing a sign language learning model.

Based on table 1, all 4 items have reached the highest consensus of experts ie more than 0.60. This shows that all the 4 items in section E were evaluated by all the experts in the design of this curriculum. However, the majority of experts agree with selecting items A 2 and A 3 with defuzzification values (0.74) should be prioritized and prioritized. This indicates that the explicit test is self-test and the receptive test is another person’s test reading signal should be given prior priority to know the level and ability of a person to master the sign language. This makes the items for A 2 and A 3 be ranked first in the list of priorities and expert emphasis based on a collective agreement of consent. This is followed by item A 4 with defuzzification value (0.727) in the second position. Next to third position is item A 1 with defuzzification value (0.706). From a specialist agreement, it is possible to have a sign language learning assessment model for special education teacher students.

Discussion

The findings show that the majority of experts agree that all items need to be present in this model as they have reached a consensus exceeding 0.60. However items A 2 and A 3 with defuzzification values (0.74) are items that need to be given priority ie expressive testing and receptive tests . Expressive testing is a test conducted to see someone trying to signal itself. While the receptive test is a test where students will read other people’s signals (Rashid & Meeze, 2015). This test is conducted to train the students’ competence and understanding in remembering the lessons learned whether to do it on their own or read other people’s signals, whether they are words or sentences through various activities (Haug & Mann, 2007). There are 4 types of expressive and receptive tests that can be performed on student teachers ie spelling alphabets, word signal tests, sentence signal tests, and quiz signal tests. Receptive and expressive tests are the first in this model as these tests are able to sharpen and enhance the students’ skills in learning sign language. Additionally, through this type of test it is possible to get people to be more sensitive and to know the form of signals that have been set (Haug & Mann, 2007).

In addition, for item A4 the interaction test is second with defuzzification value (0.727). This interaction test is a test in measuring students’ abilities and mastery of the condition in the actual situation or situation (Rashid & Meeze, 2015). The purpose of this test is to increase confidence in the student and to instil the spirit of the students using sign language in everyday life (Haug & Mann, 2007). Testing can be done by assigning students to find contact or friends with hearing loss so that students can communicate with people with hearing impairment in reality. In addition, interaction test can be done by recording a student’s video with a song’s signing or delivering a story either individually or collectively (Haug & Mann, 2007). Furthermore, this test can be done by performing a drama presentation using sign language so that the students are not only entertained but can even appreciate the situation when they become less hearing. By performing the interaction test not only will the student’s confidence be enhanced, but also to express the courage of the student in communicating using the sign language.

Subsequently, item A1 of the written test is in the third position with the defuzzification value (0.706). Written tests are written in writing on question papers and students are required to answer the given question (Rashid & Meeze, 2015). The purpose of this test is to evaluate the level of students’ understanding of the theoretical learning of the sign language, including history, linguistics, sign language grammar and so on (Haug & Mann, 2007). There are two types of written tests that can be done which are objective trials and subjective tests. For objective test the questions can be

presented by choosing the correct answer for the signal shown on the picture in the question paper provided. While for the subjective test the students will answer the question whether they are structural or essay. For student structure questions will write a sentence based on the combination of the picture of the signal that forms the sentence. Next, the student essay questions will answer questions in essay writing related theories in sign language learning. For example, questions related to the history of sign language development, linguistic sign language, how to form and movement of hands, how to communicate with the hearing impaired, etc. (Haug & Mann, 2007). Through a written test the students are not only skilled in using sign language but also students' knowledge of signal language theory can be improved and understood in more depth.

Therefore, it is clear that each item needs to be placed in designing a sign language learning assessment model for special education teacher students. All of these items or forms of assessment are crucial in designing this model as each item can improve the skills and abilities of the student's teacher in learning the sign language. In addition, this assessment will give rise to high motivational motivation among teachers to continue studying the sign language and even form the courage to communicate and teach the hearing impaired.

CONCLUSION

Sign language learning assessment model for special education teacher students is important in describing the form of assessments that can be performed on the students who follow the gesture language learning. Through the assessment, it will be able to increase the level of sign language proficiency to future teachers who will teach students with hearing impairments. This is because, according to Lim *et al.* (2006) sign language learning requires systematic training and assessment needs to be done so that the learners are more interested and work hard to learn the language. This statement is also supported by Brentari (2010), sign language learning requires testing or appropriate assessment so that the language learning experience of sign language to the student becomes interesting and effective learning. If these language skills can be mastered by special education teachers, communication barriers will not occur if these teachers are placed in special education schools hearing problems. Therefore, this learning assessment model is very important to sign language instructors to make one of the references to facilitate instructors to conduct evaluations more effectively and comprehensively. For future research proposals the researchers can refine this model to give a clear understanding to the instructors who teach the sign language to the students. Additionally, further studies can be done by developing

a sign language learning model to special education students so that the sign language learning statistics can be viewed more thoroughly.

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