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# Analysis of Pictorial Analogy Needs for Continuous Arabic Consonant Recognition among Kadazandusun Students

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**Abstract**
The analogy approach in consonant learning can help the process of recognising Arabic consonants in foreign language learning so that students can easily understand and master them. Learning the Arabic alphabet and consonants was found to be difficult for Kadazandusun students as they had never been exposed to them before entering first grade. Thus, this study aims to look at the needs of Kadazandusun students towards an analogy approach for the recognition of continuous Arabic consonants (KAB). The research questions for this study are, 1) what is the level of students' need for learning Arabic consonants in terms of interests, problems, and desires? and 2) what is the level of students' recognition of continuous Arabic consonants? This study is a survey study involving a study sample of 350 people from a total population of 3161 students of level two Kadazandusun, involving students in years 4, 5 and 6 in primary schools in Sabah. This study uses a survey-based quantitative approach. However, to further clarify the descriptive data, an interview session with two Arabic language teachers was conducted. This study uses a questionnaire instrument adapted from the study of Ridhuan (2017) to look at the learning needs of Arabic consonants in terms of interests, problems, and desires. Qualitative survey data were obtained through semi-structured interviews. Bogdan and Biklen's (1992) coding strategies i.e., activity codes and situation codes were used to help categorise themes that emerged from the qualitative data. The findings of the study as a whole show that the level of students' needs in terms of interest, problems and desires for learning Arabic consonants is high and there is a need to use an analogy approach in learning KAB. The test results showed that the students chose a picture that represented their understanding of the shape of KAB. The implications of the study show that the analogy approach in KAB learning among Kadazandusun students helps teachers and students in learning Arabic consonants.
**Keywords:** Consonant Knowledge, Continuous Arabic Consonants, Consonant Forms, Analogy Approach, Kadazandusun Students.

## Introduction

Consonant knowledge disclosure typically occurs at an early stage as one of the basic units in language learning. At this stage, students who do not have proficient knowledge of the alphabet or letters need explicit instruction that focuses on letters' identities, letters' names, and letters' forms (written forms). They need to distinguish consonant forms by distinguishing their appearance and visual form. Confusion and complexity in the early stage of learning a foreign language include recognising the visual forms of consonants and this is always the case in Arabic language learning among minority students in Malaysia. Sociolinguistic and psycholinguistic approaches that celebrate local experiences and cultures are often not used as a basis for understanding this situation causing minority students to be slow in mastering this basic unit.

In most foreign-language situations, reading skills are receptive skills that are developed earlier because they are more useful as a source of language than listening skills. Language environmental factors cause language resources from auditory input to be very limited. In the initial process of exposing students to reading skills, the consonant unit is the basic unit that needs to be considered. After they can recognise and pronounce the consonants well, the next process is that the students will be introduced to words or syllables.

## Arabic Language Learning Among Kadazandusun Students

The Kadazandusun community is an Indigenous population of Sabah and is believed to be the earliest indigenous ethnic group to migrate to the state of Sabah (Rutter, 1922; Whelan, 1970). They are made up of various sub-ethnicities differentiated according to customs, economic activities, and dialect languages. Their identities are difficult to identify and differentiate because their differences are not significant especially if based only on their dialect or language (Appell, 1968). The offering of Arabic subject at the primary school level as additional subject other than Chinese, Tamil, Kadazan and Dusun and Semai (Ikhtisas et al., 2016) has opened space for this language subject to be studied by Kadazandusun students even though Arabic is the language which is too foreign for their community. Several scholars support the ability of children to be able to speak and acquire many languages through studies and theories on bilingualism and multilingualism such as (Wallner, 2016; Iversen, 2014; Lightbown & Spada, 2013; Brown, 2007; Cenoz & Hoffman, 2003; Hammer et al., 2003; Cummins, 1984, 2001; Baker, 1996).

The status of Arabic is in the fourth and probably fifth place for the community in Sabah because the use of Arabic is very limited to time in school only. However, based on jQAF's e-Reporting records, Sabah's indigenous ethnic students, namely Kadazan and Dusun, are the majority of non-Muslim students who study the Arabic language subject at the primary school level. Based on jQAF's e-reporting records, the number of non-Muslim students of the Dusun ethnic group in 2017 amounted to 3,261 while the number of Kadazan ethnic groups amounted to 3000 people. The number of non-Muslim students representing all races who studied Arabic in 2019 recorded a total of 27, 924 people.

## Recognition of Continuous Arabic Consonant Forms

Consonant learning generally contains two main skills that need to be focused on, namely the ability to distinguish between consonant characters and the ability to distinguish the pronunciation of consonant sounds. Skills on consonant knowledge, which is recognising consonants is focused on identity, form, and name, which can be trained by familiarising students to see consonant characters in separate forms and word forms. In recognising these

two-character forms, students need to be able to distinguish how different they are in singular and word forms. The shape of the single character will change when it is in a word form. Students' mastery of this knowledge of consonants allows them to be able to move on to learning the sounds and spelling of letters. The single Arabic consonant form involves 28 consonants, and this single form is easier to remember since the arrangement of the Arabic consonants in an alifbaie manner which is arranged to facilitate shape recognition.

While the Arabic consonant forms are connected, there are nine categories of connected Arabic consonant forms that have been identified 1. ( ث ب ت ن ي ), 2.( د ذ ), 3.( ر ز ), 4. ( ل ك ), 5. ( ل ل ق ة ), 6.( م ه و ف ة ), 7.( ص ض ط ظ ), dan 8.( س ش ), ( ح خ ج ), 9. ( ع غ ء ). This continuous Arabic consonant form is different when compared to the single Arabic consonant form. This form change also varies depending on its place in the same word at the beginning, middle or the end of the word. This diversity of forms was found to have contributed to the confusion and complexity in recognising continuous Arabic consonants. Furthermore, the learning of Arabic consonants is mostly teacher-centred (Hadi, 2017), which this situation may be affected by the fact that the majority of the teachers are Malays who come to work in Sabah from peninsular Malaysia.

**Pictorial Analogy in The Recognition of Continuous Arabic Consonants**
The analogy approach can help the process of recognising Arabic consonants as students will be more engrossed in learning and this helps them master the consonants better. This analogy approach in consonant learning is one of the methods of teaching consonants which has associated the learning with the students' own names (Morrow, 1993; Eliason & Jenkins, 1990). Students in the early stages of consonant learning are more likely to recognize the consonant forms found in their names because they are always taught to recognise their own names. This method is one of the effective methods when teaching consonants in the form of contexts such as noun phrases and labels. Consonants when in contexts such as names and labels are more concrete than single consonants. Aside from their own names, they learn to recognise consonants from food labels, road signs and fast-food restaurant names (Morrow, 1993). Children were found to be able to pronounce and recognise consonant forms from their experience in observing even though they had never been taught to recognise consonants formally. Words like KFC, F&N, KRU, SHELL and so on influence children's observation experience.

Based on this approach, the form and identity of Arabic consonants can also be represented with pictures or objects that are close to one's life experience. Consistent with 21st-century learning, creating a future generation that possesses competencies in creative thinking and problem solving, creativity and innovation, collaboration, as well as communication (National Education Association, 2012, p. 7). To achieve that efficiency, learning Arabic consonants is not enough with rote learning alone, it needs to have relevant and meaningful learning innovations. The learning of Arabic consonants among Sabahan students should ideally be emphasised on learning that is based on contextual, not just textual. Consonant learning involves the mastery and recognition of consonant forms whether singular or continuous and the analogy approach emphasises the interaction between students and the object being studied. Such interactions provide opportunities for students to practice learning and understand how to learn, develop rational thinking potential, skills, and personality as well as identify problems (Suratsih, 2010).

Meaningful learning as conceived by Ausubel (1963), is learning that emphasises the relevance of new concepts to relevant knowledge that is already possessed by students

(Novak et al., 1984) and that knowledge can be formed and mastered from individual experiences. The goal is to make the learning process meaningful not just by memorising, but students are directly involved in discovering concepts and connecting them into complete knowledge. This learning optimises the students' sensory system to be more active than just listening to the teachers' explanations.

Consonant learning is abstract especially when it comes to sound and utterance knowledge. The analogy approach, which is an approach that relates existing knowledge with new knowledge by comparing two objects or phenomena that are considered to have certain similarities such as form, structure and function has helped the learning of Arabic consonants by improving students' understanding (Harrison & Coll, 2013; Subali, Paidi, & Mariyam, 2015). Therefore, the importance of this analogy approach to learning means that students can use their imagination, creativity, and innovation in learning each concept and unit of study. Thus, the purpose of this study is to analyse the needs of Kadazandusun students toward an analogy approach to the recognition of continuous Arabic consonants.

**Methodology**
This study uses a quantitative approach by using a survey study design. The population of this study consisted of primary school students' level two (years four, five and six) of the Kadazandusun tribe in Sabah which amounted to 3161 people. The sample used for this study was from the entire population, involving a total of 350 students in years 4, 5 and 6 of primary schools in Sabah (Krejcie & Morgan, 1970). The sample was selected using a stratified sampling method by selecting samples from three main zones namely West Coast (Kinabalu District), South (Papar) and North (Marudu) which involved eight schools.

However, to clarify and further understand the findings of the survey, the researchers used qualitative data through semi-structured interviews with two Arabic teachers who teach the Kadazandusun students. This is done to know and understand in depth the true state of the phenomenon under study and to ensure a more accurate analysis of the study (Bogdan & Biklen, 2007). However, these qualitative data were collected after obtaining and analysing the quantitative data. These semi-structured face-to-face interviews were chosen to allow interview participants to talk and share their ideas and experiences comfortably (Creswell, 2014). Researchers collected quantitative data by identifying the needs of Kadazandusun students towards an analogy approach in the recognition of nine forms of continuous Arabic consonants (KAB). Then these findings are explained and elaborated in-depth using qualitative data to explore the need of teachers for an analogy approach in the recognition of continuous Arabic consonants for Sabah's Kadasandusun students.

This study uses a continuous Arabic consonant recognition level test and a questionnaire of students' needs for learning Arabic consonants which covers three aspects, namely interests, problems and desires. The continuous Arabic consonant recognition level test was constructed based on the analogy approach to nine forms of continuous Arabic consonants namely 1. ( م ه و ف ق ة ), 5. ( ل ـ ل ـ ك ), 4. ( ر ز ), 3. ( د ذ ),2. ( ث ب ـ تـ ـنـ ـي ), 6. ( ص ض ط ظ ),7. ( ح ـ خ ـ ج ), 8. ( س ش ), dan 9. ( ع غ ء ). The questionnaire investigating the students' needs was adapted from the study of (Ridhuan, 2017). Two Arabic language experts were consulted to ensure that the test content and questionnaire items were appropriate to measure the constructs studied. A pilot study was conducted on 50 students. The reliability of the questionnaire instrument was assessed through Cronbach's Alpha (α) values to report internal consistency. The Cronbach's Alpha value for the usability construct

was .80. Descriptive statistics involving mean and standard deviation were used to describe the level of students' need for continuous Arabic consonant learning.

Qualitative data analysis was used to analyse the data obtained from the transcripts of semi-structured interviews of two teachers. The interview question items were constructed based on the principles or models of needs formulated by (Hutchinson and Waters, 1987). Bogdan and Biklen's (1992) coding strategies i.e., activity codes and situation codes were used to help categorise themes from qualitative data.

**Findings and Discussion**

Table 2 shows the level of need for KAB identification in terms of interests, problems, and desires. Overall, the need for KAB learning for the aspect of interest is at a high level (mean = 4.04, sp = 0.73). The item with the highest mean is the item "I am interested in learning Arabic letters" with a mean value = 4.13 and sp = 0.93. While the item with the lowest mean is the item "I practice to be able to read Arabic words" and the item "I want to be a fluent reader of Arabic words" with a mean value = 3.94 and sp = 0.84 to 0.90. The need for the development of an Arabic consonant form recognition module connected to the students' perception of the aspect of interest is at a high level. The majority of students showed a high interest in learning the Arabic alphabet.

The findings of this study are in line with the study of Nasir et al (2017) who investigated the perceptions of non-Muslim students toward learning Arabic. The students in their study have shown positive attitudes toward the learning methods used to master the Arabic language and at the same time, they have gained motivation in learning the language. However, the findings of this study also show that they were less trained to be able to read the Arabic words well.

Table 2

*Level of Need for Development of Continuous Arabic Consonant Form Recognition Module from the Perception of Kadazandusun Students in Sabah*

| Statement | Mean | SD | Interpretation |
|---|---|---|---|
| I am interested in learning Arabic letters | 4.13 | 0.93 | High |
| I am interested in learning continuous Arabic letters | 4.10 | 1.00 | High |
| I enjoy learning Arabic letters | 4.09 | 1.01 | High |
| I enjoy learning continuous Arabic letters | 4.10 | 1.02 | High |
| I practise to recognise the forms of Arabic letters | 4.06 | 1.00 | High |
| I practise to recognise the forms of continuous Arabic letters | 3.98 | 0.80 | High |
| I practise to be able to read Arabic words | 3.94 | 0.84 | High |
| I want to be fluent in reading Arabic words | 3.94 | 0.90 | High |
| **Overall Value of Interest** | **4.04** | **0.73** | **High** |
| I have difficulty recognising the forms of Arabic letters | 3.75 | 1.84 | High |
| I have difficulty differentiating the forms of continuous Arabic letters | 3.70 | 0.94 | High |
| I need high discipline to learn the forms of continuous Arabic letters | 4.35 | 0.77 | High |
| I need high discipline to improve my Arabic learning performance | 4.31 | 0.90 | High |
| **Overall Value of Problem** | **4.03** | **0.68** | **High** |
| I need a picture as a symbol to remember the form of continuous Arabic letter | 4.44 | 0.70 | High |
| I need a simple and easy method to remember the forms of continuous Arabic letters | 4.53 | 0.67 | High |
| I need reference material to recognise the forms of continuous Arabic letters | 4.62 | 0.70 | High |
| **Overall Value of Desire** | **4.53** | **0.51** | **High** |

Table 2 also shows that the need for the recognition of the form of KAB for the problem aspect is at a high level (mean = 4.03, SP = 0.68). This shows that students have problems learning Arabic consonants. The item with the highest mean was the item "I need high discipline to learn the form of continuous Arabic letters" with mean values = 4.35 and SP = 0.77. While the need for the recognition of Arabic consonant forms in connection with the aspect of desire is at a high level (mean = 4.53, SP = 0.51). Kadazandusun students desire an approach represented with pictures, concise methods, and relevant references for KAB recognition.

Quantitative findings on the problem of KAB recognition are supported by the findings of teacher interviews who acknowledge that there are several problems faced by Kadazandusun students in mastering Arabic consonants, especially in recognising the forms of KAB as stated by R1:

*"My students face problems in terms of recognising the hijaiyah letters when the letters are connected, they find it difficult to identify which one of the letters when written in a **continuous***

*state, my students are confused because the forms of hijaiyah letters in the form of single letters are not the same as when these letters are in a continuous state". Most non-Muslim Kadazandusun students are unfamiliar with Arabic letters. There are some letters they know, but the continuous letters are sometimes confusing to the." (R2/L1)*

Teacher interview findings were also found to support quantitative findings on Arabic consonant learning needs from the aspect of desire, requiring visual materials to aid consonant form recognition, simple methods and reference materials for continuous consonant form recognition.

*"I will call some students to connect the letters that have been written. And the clue is that in each of those letters, I will write the distance symbol, the symbol" (R2/L1)*

Most students think they need high discipline to learn continuous Arabic forms. In the context of learning Arabic, students can use repetition strategies to memorise and remember the words (Al-Suwairekh, 2001). Mat and Yaakob (2010) also suggested for students to remember and copy the words learned by copying or writing them using the transliteration method. Overall, the need for the development of the Arabic consonant form recognition module connected to the students' perception of the desire aspect was at a high level. The majority of students agreed that they needed reference material to recognise the forms of continuous Arabic letters. Wood (2013) also argues that students not only play with materials, but they also play with feelings, meanings, ideas, and relationships, then change these aspects through thinking. Among the suggested reference materials are pictures and symbols for remembering the forms of continuous Arabic letters.

Table 3 demonstrates the level of students' recognition of the KAB forms based on the analogy picture. The KAB forms ( ث ب ت ن ي ) show the majority of students chose the boat object which was 72 percent, ( د ذ ) show the majority of students chose the boomerang object which was 66.3 percent, ( ز ر ) show the majority of students chose the banana object which was 54 percent, ( ك ل ڶ ) show the majority chose the hockey stick object which was 43 percent, ( م ه و ف ق ة ) show the majority chose the doughnut object which was 66.9 percent, ( ص ض ط ظ ) show the majority of students chose the gambus object which was 52.3 percent, ( ح خ ج ) show the majority chose the crocodile mouth object which was 73.4 percent, ( س ش ) show the majority chose the wave object which was 84.3 percent, and ( ع غ ء ) show the majority chose the crescent moon object which was 59.4 percent.

Table 3
*Level of Knowledge on The Recognition of Continuous Arabic Consonant Forms*

| No. | Consonant Forms | Frequency and Percentage | | | |
|---|---|---|---|---|---|
| | | Bowl | Watermelon | Coconut Shell | Boat |
| 1. | ث ب ند لـ يـ | 32 (9.1%) | 39 (11.1%) | 27 (7.7%) | 252 (72%) |
| | | Handset | Cockle | Boomerang | Castanet |
| 2. | د ذ | 34 (9.7%) | 58 (16.6%) | 232 (66.3%) | 26 (7.4%) |
| | | Banana | Elephant tusk | Sausage | Brinjal |
| 3. | ر ز | 189 (54%) | 105 (30%) | 21 (6%) | 35 (10%) |
| | | Hockey stick | Fishhook | L ruler | Garbage Scoop |
| 4. | لـ لـ ك | 150 (43%) | 141 (40.4%) | 38 (10.9%) | 20 (5.7%) |
| | | Ring | Doughnut | Hula Hoop | Tire |
| 5. | مـ هـ و ڤ نـ ة | 75 (21.4%) | 234 (66.9%) | 22 (6.3%) | 19 (5.4%) |
| | | Drumstick | Gambus | Tennis Racket | Car Side Mirror |
| 6. | صـ ضـ ط ظ | 59 (16.9%) | 183 (52.3%) | 29 (8.3%) | 79 (22.6%) |
| | | Gaping Crocodile | Geometry | Scissors Tip | Stapler |
| 7. | حـ خـ ج | 257 (73.4%) | 28 (8%) | 36 (10.3%) | 29 (8.3%) |
| | | Waves | Grated lock | Saw | Comb |
| 8. | سـ شـ | 295 (84.3%) | 18 (5.4%) | 28 (8%) | 9 (2.6%) |
| | | Spanner head | Clothes Hanger Hooks | Prawn | Crescent Moon |
| 9. | عـ غـ ء | 97 (27.7%) | 18 (5.1%) | 27 (7.7%) | 208 (59.4%) |

The findings of the interview detail the results of the KAB recognition test as shown in table 3. Through these findings, the analogy approach shows that among the elements that must be present in the recognition of the forms of KAB is that the letters should be placed in three-letter forms, namely at the beginning, in the middle and at the end:

> *"I can say it's like times table card for learning mathematics. Guides like these should be included in primary school Arabic textbooks for pupils to quickly remember and can also study on their own at home without the help of a teacher." (R2/L1)*

> *"There should be objects or pictures with pronunciation that make it easier for students to remember the shape easily, for example, the letter Alif looks like a pencil shape, for example, other letters like the letters Jim, Ha, and Kho, look like the shape of a goose's head. Because these pictures or objects can attract students to learn." (R1/P1)*

> *"Because the forms of these Arabic letters are very similar to each other, then there must be groups or groups of letters according to the similarity of the form so that students can compare the different forms of letters with pronunciation." (R1/P1)*

At the primary school level, the mastery of a concept should involve students' interaction with materials (Wortham, 2010), and materials such as matching letters with objects or pictures are effective games (Johnson, 2015). The findings of this study also show the same thing by showing that most students can recognise the letters ك ل لـ from the shape of a hockey stick. Next, for the letters م هـ و ن ة , many students recognise the letters from the shape of a doughnut. As for the letters ظ ط ض ص, most students recognise them from the shape of a gambus. In the context of this study, students were able to recognise continuous Arabic letters that had a shape that was very similar to the objects around them. According to Baghban (2007); Love et al (2007), combining writing with pictures in daily activities in the classroom can stimulate students' literacy skills.

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Letter recognition activities are part of the cognitive processes that occur in the mind of the reader while reading a text (Cubukcu, 2007). This is also supported by few researchers who have found that foreign language acquisition depends on the level of knowledge of foreign language letters and consonants (Cardoso-Martins et al., 2002; Ross et al., 2004). The findings of this study also show that most students recognised the shape of the letters ج خ ح from a shape of a gaping crocodile. Next, for the letters ش س, the students recognised the shape of these letters from a wave shape. As for the letters ء غ ع, most students recognised these letters from the shape of a crescent moon. This method was also used by previous researchers by using dough as an aid to teach students to recognise letters (Aini & Liyana 2015). Therefore, in producing effective and interactive learning, teachers need to use various teaching aids such as pictures and symbols that are often used in the daily lives of students (Azmi, 2011; Azmi & Halim, 2010).

**Discussion**

The need for the development of a continuous Arabic consonant recognition module from the students' perception in the aspect of interest is at a high level. The majority of students

showed a high interest in learning the Arabic consonants. The findings of this study are in line with the study done by Nasir et al (2017) on non-Muslim students' perceptions of learning Arabic. Their findings showed that the students had a positive perception of the learning methods used to master Arabic which had helped them gain motivation in learning the language. However, the findings of their study also illustrated that the students were less trained to read Arabic words. According to Basri (2003), this may be due to the tendency of teachers who used teacher-centred teaching methods and the lack of student involvement in the teaching and learning process.

The descriptive analysis of this study also shows that, in general, the need for the development of a continuous Arabic consonant recognition module from the students' perception in the problem aspect is at a high level. Most students believed that they need high discipline to learn continuous Arabic forms. In the context of learning Arabic, students can use repetition strategies to memorise and remember the words (Al-Suwairekh, 2001). Mat and Yaakob (2010) also suggested that students remember and copy the words learned using the transliteration method.

Overall, the need for the development of a continuous Arabic consonant recognition module from the students' perception in the desire aspect is at a high level. The majority of students agreed that they needed reference material to recognise the shape of continuous Arabic letters. Wood (2013) also argues that students not only play with materials, but they also play with feelings, meanings, ideas and relationships, then change these aspects through thinking. Among the suggested reference materials are pictures and symbols, which are used to remember the shape of continuous Arabic letters.

## Conclusion
Overall, this study has provided a relevant picture of students' perspectives on the analysis of the need for the development of a continuous Arabic consonant recognition module among Kadazandusun students. The findings of this study have provided information related to the students' desires and problems related to the teaching and learning of Arabic. This information can be used by relevant parties as input to develop appropriate modules for Kadazandusun students.

## Acknowledgment

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