

Problem towards local language translation in artificial neural networks

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ABSTRACT

Regional languages are the languages used to communicate with each other in certain areas. Many factors have weakened the current generation's awareness of preserving the local language. One of them is the lack of means that can be used to access information from the regional language itself, so this is one of the obstacles that occur. This study will design a system for translating an image/image containing Indonesian text into a text in regional languages. This research starts from the pre-processing stage, the character segmentation technique in the image uses the Connected Component Analysis labeling, then the image is extracted then the character image is classified using the Artificial Neural Network method. The next step is combining characters into the text. After that, the translation process uses the Levenshtein algorithm to match the text classification results with regional languages. This research is expected to be able to translate Indonesian text images into regional language texts, to help preserve regional languages in Indonesia.



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1 INTRODUCTION

The translation is an activity when a translator translates into the target language accurately. Accuracy is needed in the translation process to produce a good and accurate translation result. Translating is replacing textual material in a language (Source Language) with textual material that is equivalent or equivalent in the target language. Translation has several meanings, but broadly speaking, it is giving meaning to a text from one language into another as desired by the writer/author in the text [1][2][3].

At this time, foreign literary works are one of the products that are widely translated into Indonesian. One of the literary products is film. Films are categorized as part of performing arts because films involve actors in conveying/expressing ideas. In addition, he added that films have visual strength and require more presentations such as camera angles, editing, fast and slow motion, recorded in a voice that tells a specific story. Meanwhile, Films present us with stories or narratives that retell through interactions between characters." In addition, the film is also a medium to convey messages to the public and also the media to influence the public [21].

Translating film dialogue requires not only the ability to understand the source language (SL) but also the ability to rewrite/translate in the target language (TL) [4]. Translation, especially in translating film dialogue, requires a comprehensive understanding from a translator in understanding the source language but also being able to find the appropriate equivalent words, idioms or phrases in translating a literary work from the source language into the target language [5].

In this study, the researcher wanted to know about the differences in the translation of slang words that were carried out by the students in translating the film dialogue from the film entitled *Deadpool 2* based on the gender/gender of the translators. Why this research focuses on the results of translation carried out by translators of male and female students because there is a link between gender and translation studies, gender differences will affect variations in language use, operationally men and women tend to use language variations differently. This is due to the results of the study which states that there are differences in the brains of men and women.

Gender Creative Translation: which is better? A case study of Saudi Learners. Hypothesized that Saudi Arabian female students tended to be able to translate far better than their male counterparts in translating poetry. In his research, the researcher gave a test to prove his hypothesis, and the results of

the translation showed that the results of the translation carried out by Saudi Arabian female students were better than the results of the translation done by their male counterparts. In addition, there is research that examines the results of translations carried out by male and female translators. The Translator's Gender and its Impacts on Translation Accuracy of Narrative Style, research conducted to test the accuracy of translation based on the gender of the translator. Based on the results of the translation, it can be concluded that the gender background of the translators does not affect the accuracy of their translation [6][7].

Previous studies focused more on the quality of translation based on the gender of the translator, whereas in this study the researcher focused more on examining the results of the translation of slang words contained in the dialogue film entitled *Deadpool 2* from English into Indonesian which was carried out between male students and women in the Indonesian – English translation class in the English Education Study Program, Faculty of Teacher Training and Education

Language is a symbol of sound, which is used to carry out the form of conversation, behavior, and courtesy. Indonesia is an archipelago in which there are a lot of various ethnic groups, cultures, customs in it, where each region has a different regional language, therefore, many regional languages are used in Indonesia. Regional languages are the languages used to communicate with each other in certain areas.

The translation dictionary is a book that contains translations into other languages. In fact, in everyday life dictionaries are deemed less efficient apart from being thick and heavy, as well as taking a long time to look for words to be translated, so this is one of the obstacles that occurs [8]. Another problem arises when local languages are considered old-fashioned and incompatible with the interactions of the current generation, which triggers the increasing difficulty or elimination of regional languages in Indonesia.

Many factors have weakened the current generation's awareness of preserving the local language. One of them is the lack of means that can be used to access information from the regional language itself so that access is needed that can help the process of translating one language into another with a fairly efficient process.

In the development of science today, developing a useful technology, one of which is digital image processing. This study aims to preserve the local language so that it does not become extinct over time by recognizing the character of an image/image of Indonesian text and focusing on translating it into a regional language. Research related to the identification

of text images into text is mostly done using the Neural Network method. Artificial Neural Networks work in the same way as human brain cells when processing information. Where information is stored and used from knowledge gained from experience so it is very suitable for use in predictive problems or classification problems that are being discussed in this study which can be used as a solution to classify various types of letters or characters as a step for translating these words [9]. Artificial Neural Networks have several methods that are widely used for character classification, one of which is Multilayer Perceptrons (MLP). Segment the characters in the image using the connected component analysis method and using the Backpropagation algorithm, where this algorithm is used as a basis for processing classification. To extract the features of each image, they used the Image Zone and Centroid and Zone Centroid and Zone (ZCZ) methods. Research on ANN was conducted to predict chili plants. In the final stage, character recognition using ANN from 32 samples, the result was 90%.

From the results of previous research, it is the reason for researchers to conduct further research using ANN because it has a better level of accuracy in several studies for character recognition. ANN is a method that is widely used for the classification process in images. Quoted from previous MLP research, before a text becomes the input to ANN, an image preprocessing is carried out, preprocessing here is changing an RGB image into a binary image [10]. To segment the character, which is separating the background from the object then labeling is done using a connected component analysis that utilizes the pixel connectivity theory in the image. Using the Backpropagation algorithm, where this algorithm is used to perform classification. In order to extract the features in the research image, the zoning feature extraction method is carried out, namely Image Centroid and Zone (ICZ), Zone Centroid and Zone (ZCZ). Research on ANN was conducted by [5] to predict chili plants. In the final stage, character recognition using ANN from 32 samples, the result was 90%.

2 RESEARCH METHODOLOGY

In this study, researchers used qualitative research methods, that qualitative research is a process of exploring a problem both social and individual problems. The research process is based on the questions that arise and the procedures taken, the data is usually taken from the participant's setting, the database is taken inductively from the specific to the general, and the researcher interprets the meaning of the data. The final report of qualitative research has a flexible structure [11][12]. Qualitative research is how researchers construct questions, and work through steep areas both ethically and politically,

systematically collect appropriate data, analyze them rigidly and disseminate the findings and implications of research.

The research design in this research is a case study research design. Case study research is a research design found in various fields, especially evaluation, where researchers develop an in-depth analysis of a case be it a program, event, activity, process or an individual. This research will focus on how male students and female students translate the slang words contained in the dialogue in *Deadpool 2* film. As well as knowing the equivalence of meaning in the translation of slang words carried out by students based on their gender.

This research will take place at the University of Kuningan to be precise in the English Language Education Study Program, at the Teacher Training and Education Faculty. English language education. Participants in this study were 4 male students and 4 female students of the English Education Study Program at level 3. The selection of participants was based on the reason that students at this level had already received translation courses, so they were considered capable of translating texts with high levels of difficulty. The process carried out is the testing process to recognize characters according to the training process that has been carried out previously. At ANN, two processes are carried out, namely the training process (train) and the testing (test). In the training process carried out by input from the alphabet dataset, the training process aims to train each alphabetical character which then becomes information to recognize other alphabetical characters during the testing process whereas, in the testing process, a text consisting of recognized characters is produced. The text introduced by ANN is then carried out by the translation process into regional languages so that the resulting output from this system is in the form of translated text in regional languages [13].

Pre-Processing. Pre-processing is the stage where image quality improvement is carried out. The first stage in pre-processing here is the binarization process. The binarization process is converting an RGB image into a binary image so that it can be seen the position of the object and the background and changing the pixel size of the image as determined by the researcher. This process aims to simplify the processing carried out during character segmentation. The output in the form of a binary image is used as input at the character segmentation stage. At this stage, the binary text image segmentation process is carried out for each object, namely separating the objects one by one based on the label and each object will be placed in a new image. Then feature extraction is carried out using ICZ and ZCZ before becoming input to the ANN model which will then be carried out character recognition process.

Feature extraction is a method of dividing the image into several zones. One of the feature extraction methods used is feature zoning as mentioned. The zoning feature extraction method is divided into 2, namely the feature extraction of Image Centroid and Zone (ICZ) and Zone Centroid and Zone (ZCZ). This feature extraction utilizes the zoning type of an image and is divided into several parts. ICZ starts by looking for the centroid point. After the centroid point is obtained, it is divided into several zones. Meanwhile, the ZCZ starts by dividing into several zones, then looking for the centroid point. Mathematically, to find the centroid point, it is formulated as follows [14].

Artificial Neural Network. Artificial Neural Network is a model inspired by how neurons in the human brain work. Artificial Neural Network consists of interconnected information to solve a particular problem, usually a prediction and classification problem. An ANN architecture as shown in Figure 9 has layers with each layer containing neurons. ANN receives data input and propagates the data to produce output.

Connected Component Analysis. Connected components are techniques that make use of pixel proximity rules. This technique is commonly used for labeling an image into sections. Pixels in a region are called connected (have connectivity) when they comply with adjacency rules or pixel "proximity" rules. This pixel proximity rule makes use of the neighbor nature of the pixels. The Connected Component Algorithm is done by labeling pixels with neighboring relationships, namely pixels that are close to each other and not separated from each other. There are two types of connectivity on the Connected Component [15].

The 4-connectivity pixel only checks for the neighbor relationship with its 4 neighboring pixels, namely horizontally and vertically. In the 4-Connected Neighbors concept, if 2 pixels are tangent diagonally, it will be considered 2 objects. The 8-connectivity pixel in Figure 11 only examines the neighbor relationship with its 8 neighboring pixels, namely horizontally and vertically or known as four diagonal neighbors. In the concept of 8-Connected Neighbors, if 2 pixels intersect diagonally, horizontally, and vertically, it will be considered 1 object.

3 RESULTS AND DISCUSSION

Data collection techniques are based on documents obtained through the translation results of the participants in translating the slang words involved in this study. In this study, researchers will conduct a comparative analysis of the translation of slang words carried out by students based on the gender of the translators, whether there are differences in the results of translating slang words carried out by male and

female students in the English Education Department. FKIP, University of Kuningan. There are 65 slang words contained in the film, in this study the researcher only used 18 slang words in seventeen phrases and sentences translated by the participants.

Based on the translation data obtained from the translation results of male and female students, it was found that the results of translating slang words carried out by male participants had a total of 11 equations from 4 participants in translating slang words, and those translated differently by 4 participants had a total of 21 differences, while in translation results 4 female participants have 40 similarities in translating 18 slang words, and there are 27 differences in translating these words. The first data presented in this study is the translation of slang words found in the first dialogue at the time. The slang word in the dialogue is slang, which is the phrase "fuck wolverine". An interesting thing emerged from the results of the translation carried out by each participant, both male and female students, male participants 2, and female participants 5 and 6 translating the word fuck into Indonesian using basic words. While male participants 3 and female participants 7 translated the word fuck into Indonesian using the word damn, male participants 4 and female participants 8 translated the word fuck into Indonesian using the word jerk, and the last only male participant 1 one who translated the word fuck with using the word fuck it.

Furthermore, the translation results of the English dialogue sentences in the minutes is then the hairy motherfucker ups the ante by dying, the slang word in the sentence is motherfucker. Below are the results of the translations carried out by the participants in translating the slang word. From the results of the translation carried out by male and female students, it can be compared to the translation results in translating motherfucker slang, namely for male participants 1 chose not to translate the word motherfucker, while 2 male participants and female participants 5, 6, 7, 8 translated the word motherfucker into Indonesian with the word Bajingan, while participant 3 chose to translate the word into two Indonesian words, namely bastard jerk. For male participants, 4 chose to use the word jerk in translating the word motherfucker. The next translation is I don't bargain, pumpkin fucker, which pumpin fucker is a slang word. Below are the results of the translations carried out by the participants, both male and female parts, in translating the slang word [16][17].

Based on the results of the translation carried out by both male and female student participants in translating the word pumpkin fucker from English into Indonesian, it can be seen that only male student participants 1 chose not to translate pumpkin fucker. The interesting thing is that the results of the translation carried out by male participants 2 choose to

translate pumpkin fucker with the word bastard, which is the word used by female participants 5, 6. For participant 3 uses the word stupid to translate the slang word. Male participant 4 translated the word pumpin fucker by using the word fucker, the word was also used by female participants 8 in translating the same word, while participant 7 preferred to use the word dog in translating the word pumpkin fucker.

The next sentence that the participants had to translate was Uh, that's so gross. The slang word contained in the sentence is gross. The following are the results of the translation carried out by male and female participants. In the results of the translation carried out by the participants, it can be seen that almost most of them translate the word gross with the same word, this can be seen from the translation results of male participants 1, 2, 4 and female participants 5, 6, 8 who translate the word gross by using the disgusting word. Whereas for male participant 3 preferring to translate the word gross with the word tacky, for participant 7 chose the word disgust to translate the word gross.

The next sentence that must be translated from the source language into the target language by the participants is Holly Shit! That's guy on fire. In the sentence there are two slang words, namely holly shit and on fire. The following are the results of the translation carried out by male and female participants. Based on the results of the translation above, it can be seen that several participants translated the word holly shit using the same word, including male participants 1 and 4 who translated the word holly shit using the word gosh. The same thing happened to the translation results carried out by male participants 3 and female participants 7, and 8 who translated the word holly shit with the word damn. The same thing also happened to participants 5 and 6 who chose to use the word so Suci in translating the word holly shit, only participant 2 used the word sial in translating the same word.

Next is the translation of the word motherfucker which is contained in the sentence let's kill this motherfucker which is contained in the dialogue contained in the film. Below are the results of the translations carried out by the participants. Based on the results of the translation above carried out by the participants, both male and female participants can be seen that there are many similarities in translating the slang word motherfucker contained in the sentence let's kill this motherfucker. There are similarities in translating the word, especially that done by male participants 2, 3, 4 and female participants 5, 6, 8 who translate the word motherfucker with the word bastard, while male participant 1 prefers the word jerk in translating the word, while female participants 7 chose to use the word bastard to translate the same word. Next are two slang words, high and fuck, contained in the sentence that babysitter of yours is high as fuck. The following are the

results of the translation carried out by male and female participants which can be seen below.

The results of the translation carried out by the participants above showed that the participants, both male and female participants, had quite a hard time translating the words high and fuck. The male participant 1 translated the word high with a big enough word now, while the male participant 2 chose to use the word disgusting and disgusting to translate the two words [18]. The 3 male participants chose to use the word high now to translate the same word. Participants 4 men chose to use the word increasingly heavy to translate the words high and fuck.

For female participants who also experienced the same difficulty, this can be seen from the results of the translation of the female participants, participant 5 chose to use the words very despicable and disgusting to translate the words as high and fuck. The 6 female participants chose to use two more damn words to translate the two slang words. Another case with participant 7 women who chose to use the word heavy drunk to translate the two slang words, while participant 8 chose the word drunk to translate the two words. In the results of the translation carried out by the participants, it can be seen that several participants, both male and male participants, have difficulty translating the slang words contained in the dialogue contained in the Deadpool 2 film. These difficulties arise due to the lack of knowledge of the participants about the meaning of the word. -slang words contained in the dialogue, and this affects the equality of meaning in the results of the translation carried out by participants, both male and female participants. As previously stated, there are four equations, the first is equality at the word level, the second is equality at the grammatical level, textual equality, and the last is pragmatic equality.

For equivalence in word, grammatical, textual and pragmatic, both male and female participants in translating almost all of them achieved the equivalence at the word, grammatical, textual, and pragmatic levels. In word equivalence the total is 52 equivalents out of a total of 8 participants. As for the total grammatical equivalence, there are 44 equivalents from a total of 8 male and female participants. For textual equality there are 51 equations from 8 male and female participants. Whereas for pragmatic equality there are 50 equations out of a total of 8 male and female participants. In the translation carried out by participants, both male and female students, there are several equivalences and inequalities of meaning. The first equivalence found in the results of the translations carried out by the participants is the equivalence at the word level. This can be seen in the results of translating the word fuck contained in Wolverine's pre-fuck, in the results of the translation carried out by participant 1 showing the equivalence at the word level

by translating the word fuck Wolverine with Wolverine's participant word by translating the phrase, participant 1 has achieved equality at the word level. , because the word fuck is the same as the word and the meaning is equivalent to the word fuck.

In addition to the word equivalence contained in the translation of what is done by male participant 1, there is also grammatical equality and pragmatic equivalence, in the word fuck itself in KBBI it is classified as a particle (a class of words which includes prepositions, conjunctions, exclamations, articles, greetings) an exclamation to express that you don't want to know anymore; indifferent; does not matter [19][20]. Meanwhile, according to the Cambridge dictionary, the word fuck itself means an exclamation or exclamation mark, whose function is to express anger or add strength to the word spoken. The two words fuck and fuck have the same grammatical function.

In addition, the choice of words has other equivalences, namely textual and pragmatic equality, textually using the word fuck to translate the word fuck textually, the word fuck can explain in detail the meaning and function of the word fuck, from the source language, namely English, into Indonesian. which is the target language. In pragmatic equality, the choice of the word fuck by participant 1 in translating the word fuck which comes from English shows the context of the situation in the use of the word. As explained in the previous explanation, the word fuck itself in the dictionary is used as an exclamation point, which is usually used to express extreme anger, and in the story the word fuck in Wolverine's fuck phrase is pronounced by Deadpool to Wolverine to express anger because of Wolverine. makes the film unattractive by death, and makes the film less competitive.

The next interesting slang word in the results of translating the slang words carried out by the participants is when translating two slang words in English, namely the word fuck, motherfucker, asshole using the same word, this can be seen from the results of translating participants 2, 3, 4, 5 and 6 which use the word bastard in translating the word motherfucker in the sentence let's kill this this motherfucker. For equivalence or equivalence in words, the word bastard can be considered as word equivalent in translating the word motherfucker its meaning in English is an offensive word addressed to people who are disliked, while the word bastard itself means criminals or harsh words on someone who is not preferred. From a grammatical point of view, the word bastard itself is the equivalent of the word motherfucker, because the two words have the same form, which is the same in the noun form.

Meanwhile, the textual equivalent of the word bastard has a textual equivalent to the English slang word motherfucker. This correspondence is appropriate and coherent with the situations and conditions in the film which will ultimately correspond pragmatically because the slang word was uttered by Deadpool who is the main character in the film when he tells about his actions that will kill the criminals around him who are seen. like a gangster.

In addition to the word motherfucker, there are other words that almost all translate with the same word, namely when translating the slang word gross, almost all participants except participant 3 use the word disgusting in translating gross slang. The word gross is to express displeasure, whereas in the word disgust it has the meaning as an interjection to express dislike, because of that the two words have a word equivalence or parity. In addition, the word disgusting and the word gross have grammatical equivalence, the two words have the equivalent or equivalence in their form, both are adjectives. In addition, the word disgusting is textually equivalent to the word gross, because it has similarities in meaning and grammatical and cohesionally displays the same information between the subtitle and the dialogue in Deadpool 2. The word disgusting itself has pragmatic equivalence to the word gross with the contents of the story, and context. the situation that occurs in the film, can be seen by the use of the word gross when Deadpool, who is the main character in the dialogue, expresses his disgust when killing the criminals in the film.

The inequality in the results of the translation carried out by the participants in translating the dialogue in the Deadpool 2 film, is due to the inability to find an equivalent word in translating English slang which is the source language into Indonesian which is the target language. An example that almost all of them are unable to translate the word slang is the word holy shit in the sentence holy shit that guy's on fire. Almost all of the participants translated the slang word holy shit as damn, so holy and oh my god. The three words are less equivalent when used in translating the word holy shit. First, the equality of the three words are not equivalent, because the word holy shit has two words while the three words are one word.

Whereas in the aspect of grammatical equivalence the word holy shit is included in the adjective, while gosh in the form of particles, for the word damn itself is noun, while the word so saints is not parsed because there is a word so which should be pretentious, and kat sok Suci there are two different words in different forms pretentious is an adverb and holy is an adjective. Meanwhile, the textual equivalence of the words gosh and damn is not because textually the two words are used for shock and swearing, while the word holy shit is to express admiration and surprise at the same time. Meanwhile, pragmatically the two words are not equivalent.

At this stage the researcher carries out several processes on the input image in the form of a text. Prior to classification, first the input image is preprocessed, the process carried out at this stage is the thresholding process. Thresholding is changing the text image into a binary image so that it can be seen clearly the position of the object and the background. The results of the binary image are rotated to prevent misordering of labels, the process of labeling each object in the image using CCA.

Furthermore, the character segmentation process is carried out. This character segmentation aims to separate objects by section based on their labels. Then, after obtaining these characters, feature extraction is carried out on the image using the zoning method. After that, the character image classification process is carried out using the Artificial Neural Network method. ANN contains data on the training process and testing process. The training process aims to train ANN to recognize objects in the image and produce a model. While the testing process aims to test a model that has been made. The testing process is carried out with new test data that has never been used in training. The first step is to call the model that has been formed in the training process. After that, input the input image and pre-process it as previously described until the image has an object from the initial image. Each image containing the object is processed the same as that of the alphabet image.

4 CONCLUSION

This research is related to research on the differences in the translation of slang words contained in the dialogue in the Deadpool 2 film carried out by participants which are based on 18 slang words in seventeen phrases and sentences translated by the participants are differentiated based on the gender of the translators who amounting to 4 people for each gender. Based on the translation data obtained from the translation results of male and female students, it was found that the results of translating slang words carried out by male participants total 11 equations in translating slang words from 4 participants in translating slang words, and those translated differently by 4 participants were a total of 21 differences, while the translation results 4 female participants have 40 similarities in translating 18 slang words, and there are 27 differences in translating these words. Based on the results of research and discussion of the classification of text images for local language translation using this Artificial Neural Network (ANN), the following conclusions can be drawn: Artificial Neural Network (ANN) method can be used to identify text images.

The model is used in the testing process to classify and is able to classify 1,591 images correctly. The edit distance algorithm can improve the translation to 3,422 texts, previously only

1,591 texts. As for the equivalence in word, grammatical, textual and pragmatic, both male and female participants in translating almost all of them reach that the participants have achieved equivalence at the word, grammatical, textual, and pragmatic levels. In word equivalence, the total is 52 equivalents out of a total of 8 participants. As for the total grammatical equivalence, there are 44 equivalents from a total of 8 male and female participants. For textual equality, there are 51 equations from 8 male and female participants. Whereas for pragmatic equality there are 50 equations out of a total of 8 male and female participants. Some inequalities or inequalities occur because the participants have difficulty understanding some slang words at the word, grammatical, textual, and pragmatic levels. This happens because the participants lack mastery of vocabulary, as well as difficulty finding equivalent words in the language Indonesia due to the limited vocabulary of slang words in Indonesian so that several slang words are translated with the same word in Indonesian

8. Indonesia.

Conflict of Interest Statement

The authors declare no conflicts of interest related to the material presented in this article.

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