Indonesian-german bicultural literacy comprehension: The students' inference perspective

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Abstract

To comprehend a text, one needs to understand the relationship of various elements in it. The skill that helps connect the non-textual components to the textual ones is making inferences. This research aims to reveal different types of inferences made by the students with German-language proficiency of level B1. A qualitative research approach was applied to obtain more objective, comprehensive, valid, reliable, and in-depth data. The data were analyzed with a narrative research design to describe the students' responses based on the rubric assessment. The results showed that inference within the framework of cognitive dimensions is a form of students' knowledge. They unite pieces of information, then predict, conclude, and synthesize a bicultural text's meaning. The inference types found were the superordinate goal, instantiation of noun category, causal antecedent, the emotion of the reader, referential, thematic, and character emotional reaction. The results of research on inference have a contribution to literacy comprehension and teaching. The various inferences produced by students prioritize the broadness of vocabulary in predicting reading comprehension.

Keywords: Comprehension; Literacy; Bicultural; Inference; Indonesia; German

1. Introduction

This current research revealed various types of inferences in literacy comprehension of a bicultural text made by the students of the German Language Education Department and how they made inferences on the words, phrases, or sentences in a bicultural text that elicit inferences.

One of the bicultural texts which present, combine, and blend the lives of two or more cultures is "*Der Weg nach Bandung*" (DWnB) written by Kordon (2000). The text contains functional and social communication. Besides, Kordon offers the world's knowledge and certain cultural interests that can be identified and reviewed by the students as readers. DWnB opens up opportunities for the readers to interpret symbols and construct the revealed meaning.

Some studies on DWnB have been conducted. One of them was by Choddijah (2015) which examined the motives of Tadaki (the main character) in the novel DWnB. The research indicated that Tadaki's behavior is motivated by primary and secondary motives, intrinsic and extrinsic motives,

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single and join motives, the closer and farther motives, the conscious and unconscious motives, as well as biogenesis, sociogenesis, and theogenesis motives. Of the diverse motives, sosiogenesis is the primary motive, in the form of emergency, that influences Tadaki's behavior. Another study analyzing DWnB was researched by Purnomowulan (2015). It generates a review of literary sociology about the condition of the marginal urban communities so that the stereotype of the people of Bandung in the past is represented through the story in DWnB, which is then compared with the current conditions.

Different from those previous studies, this current research focused on the students' inferences on DWnB text. It is the study of psycholinguistics within the literacy comprehension of an Indonesian-German bicultural text. The text's situation leads the readers into the interpretation process (Fanani, A., Setiawan, S., Purwati, O., & Maisarah, 2020) and information restructuring of a text-based on the previous understanding of the domain of relevant knowledge. A logical literacy level can be formulated after identifying the difficult parts of the text, considering the inter-relatedness of the text's elements, and making an inference.

Narrative texts open opportunities for readers to expand their knowledge of actions and events that occur around them. With adaptive conditions, readers can infer and integrate previously acquired knowledge into narrative understanding in the text. This knowledge-based inference is the reader's important thinking construct concerning the referential situation model.

Graesser, Singer, & Trabasso (1994, p. 372) explained that a knowledge-based inference is constructed when the readers comprehend a narrative text. They potentially produce various inferences when they construct a referential situation about the content of the text. They try to build a representation of meaning and explain why actions, events, and circumstances are mentioned in the text. This research used the types of inferences proposed by Graesser et al. (1994, p. 375), as illustrated in table 2, to reveal how the students made inferences on the DWnB text.

2. Theoretical Background

2.1. Literacy Comprehension

Literacy is an effort to develop creativity for opening up minds, enriching experiences, and broadening the readers' horizons (Kern 2000, p. 16). The ultimate aim is to explore understanding and solve problems. This research is a basis of knowledge management that provides a strategic value to increasing knowledge as a superior and sustainable resource.

In the comprehension process, ideally, someone will try to build a relationship between the situation that is read or heard and the representation of the situation in memory, given that the process of comprehension always involves the construction and application of mental representations that are integrated into the text.

The inference is one way to process a person's reasoning related to the cognitive dimension of literacy. Readers can describe the main idea to be extracted from the information gathered. Inference and integration are defined as using relevant general knowledge to understand the information implied in a text or story, in the form of prediction, conclusion, and synthesis of meaning. Furthermore, readers can combine the main ideas to generate new concepts by recognizing the relationship between the existing concepts and integrating them into the main statement. Finally, readers can compare new knowledge with previous knowledge to determine the added value, contradiction, or other unique characteristics of information and integrate new information with previous information or knowledge.

According to Aini, Kisyani, & Ridwan (2019), in a logic review, students as readers can describe the main idea to be extracted from the collected information, and combine the main ideas to produce new concepts. When the readers can understand the content and the form of the reading and then

communicate it, it means that the information obtained has been codified. Information can be codified depending on the skills, attitudes, knowledge, and socio-cultural systems that affect a person or a reader. The term that represents codification is coding (Freebody and Luke 1990, p. 15).

Waterhouse, Clark, & Clark (1979, p. 53) explain that comprehension begins when a reader isolates and identifies the text's structure and constructs the appropriate proposition to construct interpretations shaped by the strategy he applies. Furthermore, to build mental representations created from a text, a reader needs to build his or her own knowledge from the perceptions that appear in the discourse (text). A reader understands and reconstructs contextual knowledge and fosters positive values and attitudes in learning. In the case of reading a text, a reader will get the whole picture of the situation that is told and not from words for words or sentences for sentence interpretation, instead. This is what Page (2006, p. 801-833) calls a process of mental representation and a situation model. Many of the same skills and processes are involved in how a person performs spoken and written language activities. Processes and skills in written language are referred to as "literacy comprehension". Reading skill is a complex process involving cognitive and metacognitive skills (Evanchan 2015, p. 1). To be successful, reading requires readers to combine these skills appropriately.

A vital component in the success of one's education and work is having literacy skills and functional language. It is this ability that shapes literate society on a micro and macro scale. A literate person can find new sources of skills and knows how to increase knowledge. Besides, he can also develop his thinking skills according to the problems at hand, foster social skills in working together in the classroom, be tolerant, communicate well, and be responsive to other people's ideas. Quoting Holmes, Suryaman (2015, p. 171-173) said that "Literacy by its nature is about what we do with certain types of text. This statement means that Literacy by nature is an activity carried out with a certain type of text that aims to explore a learner's way of thinking and reasoning. From this explanation, the notion of literacy comprehension refers to the construction and application of mental representations into texts related to inference.

2.2. Inference

Reasoning logically opens the opportunity for someone to be involved in language comprehension. Johnson-Laird (1985, p. 115) explained that the process of reasoning could be seen from the components of information-integration and inference (conclusion). According to him, inference will succeed in influencing a person if he can get the correct conclusion. This is because when someone has integrated information, he can infer correctly based on the object displayed. The object needs to be assessed if it has been interpreted correctly or even leads to other alternatives. In inference, information can sometimes mislead someone's understanding or even not. The examples of such situations can be seen in the following table:

Table 1. The Example of Inference

Massari blickte sich erst nach allen Seiten um, dann legte er seinen Mund an Tadakis Ohr. „Hast du schon mal was von Bah Bolong gehört?“
Tadaki fuhr zurück. Natürlich hatte er schon von Bah Bolong gehört. Gehört hatte jeder dem geheimnissvollen Anführer einer Bande von Jugendlichen, die in Geschäfte einbrach, Fremde auslünderte und auch von Mord nicht zurückschreckte. Nur gesehen hatte ihn noch niemand. Aber warum fragte Massari ihn das?
(Kordon 2000. p. 31)
*(*Massari first looked around him, then brought his mouth to Tadaki's ear. "Have you ever heard about Bah Bolong?"
Tadaki stepped back. Of course, he has heard about Bah Bolong. Everyone has heard about the mysterious leader from a group of young people who break into the shop, exploit foreigners and who don't hesitate to commit murder. But no one had seen him before. But why does Massari ask him about that*?)*
Inference questions:
Wie hat Tadaki auf die Worte Bah Bolong reagiert? Und was denkt er?
(How is Tadaki's reaction to Bah Bolong's words? And what is he thinking about?)
Correct answer (appropriate inference):
Tadaki was surprised and confused. His surprise is described in the sentence "*Tadaki fuhr zurück* (Tadaki stepped back)" while his confusion is shown in the sentence "*Natürlich hatter er schon von Bah Bolong gehört.* (Of course, he has heard about Bah Bolong.)" Tadaki doesn't understand why Massari asked about Bah Bolong, because, in his opinion, it is something that everyone must have known.
Incorrect answer (inappropriate inference):
Expressively, Tadaki gave a casual reaction. The proof is that he drove back (*Tadaki fuhr zurück*). However, his mind gave a different response.

In one of the appropriate answers, readers are presented with information that leads them to the appropriate inference at first. In this case, the text leads them to conclude that Tadaki reacted to Massari's question. On the other hand, in one of the incorrect answers, readers are led by the word "*fahren zurück*" which is literally translated as "to go (ride) back". It was revealed in the story that there was another situation taking place. In particular, Tadaki did not understand why Massari asked about Bah Bolong. According to him, it is certain that everyone knew it. Tadaki knew that Bah Bolong was the leader of a gang of thieves with many men. But no one knew firsthand. It is in this particular condition that one needs to change the conclusion drawn from this section. The comprehension in this exercise is in the form of what is first perceived during reading.

Such activity relates to how a person tries to draw inference and is required to use information that is not explicitly provided. The information that is relevant to Tadaki's story above has never been explicitly explained, namely the expressive reaction, only gestures that show. Interpreting new things and rejecting situations is a person's way of coordinating inappropriate mental models to new and correct mental models to do a job well.

The mental model in question is related to how a person builds thought and mental processes about the text. Reading is a complex and intellectual skill that requires coordinating several components (Waterhouse, Clark, and Clark 1979, p. 111). The components are the levels of words, sentences, and discourse coded for mental representations, which Page (2006, p. 802) calls "a situation model". Supporting Page's statement, Dempsey & Skarakis-Doyle (2017, p. 3) asserts that to produce a meaningful and coherent mental representation of a story, one must understand the structure of vocabulary, morphology, and syntax, integrate world knowledge, understand the structure of goals, and generate inference.

Graesser et al. (1994, p. 371) state that knowledge-based conclusions are built when readers understand narrative texts. They have the potential to generate multiple inferences when modeling referential situations about the content of the texts. Readers seek to construct representations of meaning and explain why actions, events, and circumstances are mentioned in the text (Graesser, Singer, and Trabasso 1994, p. 372). According to Graesser et al. (1994, p. 375), there are 13 types of inference.

Table 2. Types of Inference

Type of Inferences		Brief Description
Class 1:	Referential	A word or phrase is referentially tied to a previous element or constituent in the text (explicit or inferred).
Class 2:	Case structure role assignment	An explicit noun phrase is assigned to a particular case structure role, e.g. agent, recipient, object, location, time.
Class 3:	Causal antecedent	The inference is on a casual chain (bridge) between the current explicit action, event, or state and the previous passage context.
Class 4:	Superordinate goal	The inference is a goal that motivates an agent's intentional action.
Class 5:	Thematic	This is the main point or moral of the text.
Class 6:	Character emotional reaction	The inference is an emotion experienced by a character, caused by or in response to an event or action.
Class 7:	Causal consequence	The inference is on a forecasted causal chain, including physical events and new plans of agents. These inferences do not include the character emotions in class 6.
Class 8:	Instantiation of noun category	The inference is a subcategory or a particular exemplar that instantiates an explicit noun or an implicit case role that is required by the verb.
Class 9:	Instrument	The inference is an object, part of the body, or resource used when an agent executes an intentional action.
Class 10:	Subordinate goal-action	The inference is a goal, plan, or action that specifies how an agent's action is achieved.
Class 11:	State	The inference is an ongoing state, from the time frame of the text, that is not causally related to the story plot. The states include an agent's traits, knowledge, and beliefs; the properties of objects and concepts; and the spatial location of entities.
Class 12:	Emotion of reader	The inference is the emotion that the reader experiences when reading a text.
Class 13:	Author's intent	The inference is the author's attitude or motive in writing.

Research on inference conducted by Holliway (2004, p. 334) showed that reading-as-the-reader could improve students' ability to write descriptive writing, following the readers' needs. When students engage in a process that reflects their reading experience, students can more accurately revise their descriptive essay to meet the reader's need for information. The results of the writing have a

positive impact because it allows them to explore a deeper interpretation of their reading results. Students add previously acquired knowledge to reading comprehension.

Meanwhile, Aishwarya & Deborah (2020, p. 1) conducted a study on the influence of age and instructional language on narrative understanding and the ability to make inferences for students aged 8-15 years. The studies show that literal ability and coherence have differences in the outcome of performance based on age. Older students can better understand the narrative macrostructure and are better in inference making of the text than younger students. Older students find it easier to make comparisons and elaborative conclusions.

2.3. Bicultural Indonesian-German

Grosjean (2015, p. 572) directed the term "bicultural" in the cross-cultural and psycholinguistic fields and included it in the interdisciplinary topic. Bicultural texts are used because there is an intertextual relationship between German-language texts and the students' textual responses as the Indonesian readers. In this study, the bicultural text is a German-language prose text that contains a foreign culture (German) to be interpreted by the Indonesian readers (the students). The prose texts are used in learning German as a foreign language because such a text functionally contains emotional and aesthetic elements that may enrich one's communication skills (Nia, Ghaemi, and Afraz 2013, p. 115). The communication skill here refers to how a person can predict, develop vocabulary, and understand a set of words to increase their proficiency level (Jašová 2009, p. 14).

German learners develop through the formation of an identity that is influenced by the socialization of the family and the context of the community, as well as a culture that is integrated into learning German. This integrated cultural identity is bicultural between Indonesia and Germany.

Biculturally, Nesteruk, Helmstetter, Gramescu, Siyam, & Price (2015, p. 467) discussed the development of ethnic identity among young adults from immigrant families from various countries of origin. The bicultural theme was also discussed by Singh (1997, p. 280) in the issue of education in Europe. It tries to develop students' understanding of their own backgrounds to understand other cultures, deal with diversity positively, recognize different learning styles, deal with racial prejudices, and practice cooperative learning. He concluded that education about intercultural and human rights is very much needed in learning.

Meanwhile, Aini et al. (2019) explained that in terms of the bicultural aspect, students could integrate the cultural aspects by identifying foreign cultural identities (German), comparing them with the reader's culture (Indonesian), presenting logical and objective perceptions in identifying foreign cultural identity (German), and describing events, stories, and incidents that represent German culture and language.

Therefore, research on inference making in literacy comprehension supports previous studies. What distinguishes it from the previous studies is that the scope of cognitive literacy is clearly reflected in every inference generated by students as research subjects.

An inference as comprehension is closely related to the DWnB bicultural text. It is used as a framework to find out how students differently form their own cultural identity and know the student's subjective perceptions in managing another cultural identity (Tulgar, 2018), namely German culture. Independently, students build knowledge from perceptions that arise from a discourse (text).

3. Methods

This study employs a qualitative approach to gain more objective, comprehensive, valid, reliable and in-depth data. It explores the students' literacy and language comprehension through inference and

bicultural (Indonesian and German) understanding. The data were qualitatively analyzed through a description of the student's comprehension and responses.

This study explored the substantive area to gain new understanding through bicultural literacy comprehension of the students. It aimed to support classroom learning with the model/strategy of learning German as a foreign language (*Deutsch als Fremdsprache*), multimodal, literal competence standards, and critical intercultural analysis. These four things are the background for students' activity on reading skills and the basic principles of literacy and comprehension. Specifically, the students explore the topics of the texts, identify new concepts, and reflect on them critically.

The research subjects were the students of the German language education study program who had German language proficiency of level B1. The number of students in one batch of the related academic year who had completed the German-language proficiency exam of level B1 was 12 students. To obtain more valid data, the researcher conducted an in-depth study of the students.

The data gained from the text (words, phrases, sentences that elicit inference) and from the research subjects (the inferences made by the students) were then coded as follows:

1) The data from the text were coded using the guideline as in table 3.

Table 3. The Data Coding from The Text

Code	Abbreviation Description
DK	Cognitive Dimensions
Inf.	Inference
Inf.01	Cognitive Dimensions Inference Data no. 01

The code DK/Inf.01, for example, means words, phrases, or sentences that were included in the cognitive data (DK). 01 means the finding of the first word, phrase, or sentence which was then categorized into the type of causal antecedent inference.

2. The data gained from the students (the inferences made by the students) were coded using the guideline as in table 4.

Table 4. The Data Coding of The Students' Inferences

Code	Abbreviation Description
DK	Cognitive Dimensions
Inf.	Inference
DK/Inf.03/KDW	Cognitive Dimensions Inference Data no. 03 Research subject KDW

The code DK/Inf.03/KDW, for example, means a word, phrase or sentence was included in the cognitive data (DK), the third finding (03), and made by a student with the initials KDW (Kartika Dewi). The inference was, then, categorized into superordinate goal inference types.

A Focus Group Discussion (FGD) was conducted to get the best result for each stage of the research. FGD was conducted to analyze the results of data processing. The provisional conclusions of the research results were confirmed in the FGD. The data were the students' answers or responses

(understanding) about the novel by Klaus Kordon entitled "*Der Weg nach Bandung*". There were 12 students' responses to analyze in this current research.

The supporting instruments used were (1) the novel by Klaus Kordon entitled "*Der Weg nach Bandung*", (2) literacy comprehension text, (3) literacy comprehension test instrument which contains several standards and performance indicators, and (4) an interview guide. This current research used a data-source triangulation technique to test the validity of the in-depth data.

This research was conducted using the following stages of research activities:

1. grouping the data according to inference type.
2. describing the data was in accordance with the inference process made by the student.
3. drawing conclusions from student's inference data that lead to the logical dimension. This dimension includes comprehension regarding coding, semantic, pragmatic, critical analysis. This conclusion refers to the multidimensional representation model (table 5.)

The data were analyzed with a narrative research design to explain the test results based on the rubric assessment, which was then described in the table of interpretation results. It was to provide a general overview of this research's problems, which is the literacy comprehension of bicultural Indonesian German and its development in multidimensional literacy. The assessment rubric is adapted from Aini et al., (2019).

Table 5. Multidimensional Representation Model: Literacy Comprehension

Comprehension	Dimension			
	Lingual	**Logic**	**Social**	**Cultural**
Coding	Describe and mention the required information related to the textual knowledge and convention text.	- Describe the central notion of extracting from the collected information. - Combine the central notion to create a new concept.	Validate understanding and interpreting information through discourse with others.	Integrate the involved cultural aspects, especially bicultural/intercultural
Semantic	Explore general information resources to be acquainted with the related topic well and more deeply. Identify a particular concept and term which describes the required information.	Identify related keywords, synonyms, and terms for the required information.	Extract the information by investigating the cultural and social context where the information is created.	Emerge further intercultural discussion: receipt and compare
Pragmatic	Figure out the content which necessarily communicated, compared with spoken/written	Giving a clear & supportive statement and independently build knowledge from the perception that appeared from the discourse (text).	Understand and reconstruct the contextual knowledge and arise value and positive behavior in learning.	The balance between stereotype and prediction.

Critical Analysis	Conclude the meaning on the semantic level and restate on their own words.	Combine the central notion to create a new concept by: Know the relation among exist concept and combine into the central notion. Compare new knowledge and previous knowledge to determine additional value, contraction, or other unique characteristics of the information. Integrate new information with previous information or knowledge.	Determine the impact of new knowledge on the system of individual value.	Associate cultural perspective as a form of reflection and self-reflection.

4. Results and Discussion

Based on the data collected, seven types of inference were found: superordinate goal, Instantiation of noun category, causal antecedent, the emotion of the readers, referential, thematic, and character emotional reaction. The following are the descriptions of the findings.

Table 6. Results of Analysis

Type of Inference	Data in the text	Data of students' inference
1. Superordinate goal	DK/Inf.03	DK/Inf.03/FAL, DK/Inf.03/MSA, DK/Inf.03/NKH
	DK/Inf.07	DK/Inf.07/ASR, DK/Inf.07/CND, DK/Inf.07/KDW
	DK/Inf.09	DK/Inf.09/ASR DK/Inf.09/KDW, DK/Inf.09/DER,
2. Instantiation of noun category	DK/Inf.10	DK/Inf.10/CND, DK/Inf.10/NSB, DK/Inf.10/FAL
	DK/Inf.11	DK/Inf.11/DER, DK/Inf.11/NSB, DK/Inf.11/KDW
3. Causal antecedent	DK/Inf.01	DK/Inf.01/CND, DK/Inf.01/FAL, DK/Inf.01/MSA
	DK/Inf.02	DK/Inf.02/KDW, DK/Inf.02/NSB, DK/Inf.02/NKH

4. The emotion of the reader	DK/Inf.05	DK/Inf.05/ASR, DK/Inf.05/FDW, DK/Inf.05/KDW
	DK/Inf.12	DK/Inf.12/WUF, DK/Inf.12/KDW, DK/Inf.12/FAL
5. Referential	DK/Inf.04	DK/Inf.04/CND, DK/Inf.04/FDW, DK/Inf.04/MSA
6. Thematic	DK/Inf.06	DK/Inf.06/WUF, DK/Inf.06/KDW, DK/Inf.06/MOS
7. Character emotional reaction	DK/Inf.13	DK/Inf.13/KDW, DK/Inf.13/ASR, DK/Inf.13/CND

4.1. Type of Inference: Superordinate goal

Text that elicits inference:

Ob ich die Kuh bin, die euch nährt, oder der Tiger, der euch frißt, liegt ganz allein an euch.

(Whether I am a cow that feeds you or a tiger that preys on you is completely up to you.)

(Data code: DK/Inf.07)

Student's inference:

It means "Never believe in someone easily" because he/she will not always be good or bad. Be always cautious, even if he/she looks dependable. In the German language, "*die, Kuh, die euch nährt* (a cow that feeds you)" illustrates a virtue/goodness, so contextually, it is associated with a good and trustworthy person. An Indonesian saying notes that the right hand always symbolizes good things because most human activities are performed by the right hand; even a left-handed person eats and shakes hands with the right hand. On the contrary, the left hand is connoted as something dirty because it is generally used to do something dirty, like cleaning certain areas on the human's body. Therefore, the left hand is symbolized as something that contradicted goodness/virtue. In this context, "left hand" is similar to the phrase "*der Tiger, der euch frißt* (a tiger that preys on you)" that denotes something detrimental and a metaphor of vandal/troublemaker. (Data code: DK/Inf.07/KDW)

Explanation

Inference in the data leads to encouragement to take action. The inference is also compared with an Indonesian proverb: "the right hand always symbolizes good things". This type of inference shows that the students know about the facts, ideas, and stories in a bicultural text. They know the concept of knowledge or explicit information. Strategies for reading and understanding texts that contain two cultural elements are explored to have further understanding. From this view, cognitive-dimension literacy can be extracted from the students as the research subjects. Cognitive-dimension literacy biculturally includes knowledge of bicultural concepts, the use of the knowledge in analyzing bicultural texts, and problem-solving.

4.2. Type of Inference: Instantiation of noun category

Text that elicits inference:

»Eine Portion Strenge gehört dazu – und eine Portion Liebe! Er ist bei mir durch eine harte Schule gegangen, aber es hat ihm genutzt. Lieber frühe Tränen als späte.

(It takes a set of strengths - and a set of love! He had had a tough school time with me, but that was what served to his advantage. Better to cry first than to realize it too late.)

(Data code: DK/Inf.10)

Student's inference:

In Indonesian, the expression "*Lieber frühe Tränen als späte (*Better to cry first than to realize it too late)" means better to suffer at the beginning than happy in the end. It has an equivalent in Indonesian saying, namely *"Berakit-rakit ke hulu, berenang-renang kemudian"* ("Rafting upstream, swimming sideways") which means suffering first, having fun later. "

Both proverbs, the German and Indonesian versions, have the same meaning, describing adversity in the beginning to gain happiness in the end. In German, the word "*Träne*" is used to replace the word "sad" with the description *"lieber frühe ... als späte"*. While in Indonesian, it is directly explained with the phrase *bersakit-Sakit* ("suffering"), which is followed by the descriptive words after it "first, ...then".

(Data code: DK/Inf.10/CND)

Explanation

In Data DK / Inf.10, "*Lieber frühe Tränen als späte* (Better to cry first than to realize it too late)" shows a further explanation of a sentence pattern that is explicitly written in the text. Data DK/Inf.10/CND states that the meaning of "*Lieber frühe Tränen als späte*" is "It's better to suffer at the beginning, then be happy at the end." A further explanation of this is its comparison with an Indonesian saying, *"Berakit-rakit ke hulu berenang-renang kemudian"* ("Rafting upstream, swimming sideways.") which means "suffering first, having fun later."

Inference questions are in the form of inference responses. Such inference aims to extract the readers' previously acquired knowledge, making use of personal experience. Readers are asked to consider the implied information that does not appear in the text and extrapolate the information outside the text. They broaden their perspective based on the available information in the text by following the emerging trends.

In making meaning, the students used deductive reasoning. Firstly, they compiled arguments from the general statement in Data DK/Inf.10, then made a specific conclusion with an additional comparison of the proverb in Indonesian. The proverb used has parallel meanings with the Data DK/Inf.10. It proves that the student's reasoning is accompanied by drawing a conclusion. What the students did was the optimization of thinking activities with an effective method. This method helped students activate their reasoning, which can also be used in everyday life.

4.3. Type of Inference: Causal antecedent

Text that elicits inference:

"*Ich werde endlich mal 'ne Chance bekommen bekommen.*

(I'll finally get the chance)

What does the word "*eine Chance*" mean?

(Data code: DK/Inf.02)

Student's inference:

In this context, the word *Chance*, which means "opportunity" symbolizes taking advantage of the situation to change the current conditions. So, this sentence can mean that Massari is trying to find and exploit the situation.

(Data code: DK/Inf.02/KDW)

Explanation:

An example of inference in the causal chain is shown in data DK/Inf. 02. The findings of this study also revealed that the parts needed in literacy are prediction, inference, and meaning synthesis. They are thought processes that link the knowledge of the language, texts, and content with the world to create textual meaning. The inference of this type is presented in data DK/Inf.02/KDW.

The inference is defined as the use of relevant general knowledge to understand the information implied in a text or story in the form of prediction, inference, and synthesis of meaning. The students draw an inference and are required to use the information provided inexplicitly. The text directs the students to examine the data presented in such a way so that they would make suitable inferences based on the inference questions. As presented in table 1, the students responded as expected (appropriate inference). The word "reaction" is interpreted as a "surprise" and "confusion" (from the phrase "*Tadaki fuhr zurück*"). The last sentence becomes a key point of one's reaction when something appears unexpectedly and suddenly. *"Überrascht und verwirrt"* (shocked and confused) or *"geschockt und drehte sich dann reflexartig zu Massari um"* (startled then reflexively turned to Massari) is the interpretation of "*Tadaki fuhr zurück"* (Tadaki stepped back). The meanings reflect the inference with the causal antecedent type, namely building local coherence with a formed explanation derived from a sentence. This type of inference occurs on a causal relationship between the explicit actions, events, or statements at a certain time and the previous contents.

Integrating contextual information in the text is important for an understanding because it helps readers build a coherent representation of the meaning of the text (Kintsch 1998, p. 461). Using inferential skills is one of the ways and is the essential element for understanding a narrative text. Data DK/Inf.02/KDWshows how students understand the causal relationship associated with an event. The structure is a cohesive device that plays a vital role in allowing the students to organize the global understanding (Dolgunsöz, 2016) with the text's information because they are using the theme of the story. In other words, the theme of a story has an essential role in the text's coherence.

4.4. Type of Inference: Emotion of reader

Text that elicits inference:

»Wir sind arm, aber nicht dumm. Und wenn ich erst Pfleger bin und du Putzfrau, dann sind wir auch nicht mehr arm. Und wer nicht arm ist, der ist reich, hast du immer gesagt.

(We are poor, but not stupid. And once I become a nurse and you become a maid, then we are no longer poor. And whoever is not poor means he is rich, you always say.)

(Data code: DK/Inf.12)

Student's inference:

I agree. Those who are not poor are rich because, for me, being rich does not always mean having much money. When he feels anything is sufficient and does not worry about tomorrow, he is rich. So, when he/she is not poor, we can say that he/she is rich. However, I disagree with the statement because it goes into one line, as if in this world there are only *arms und Reich (poor and rich)*, glorifying *der Reich* (the rich) too much.

(Data code: DK/Inf.12/FAL)

Explanation:

DataDK/Inf.12/FAL refers to the exchange of pragmatic communication between the readers and the author. Readers should be creative in processing information, including observing the complexity

of reality in the text of DWnB. How readers process information and have a critical attitude requires creativity or thinking divergently (out of the box). Emotional upheaval is similar to one's efforts, which can control the situation skillfully through diverse processes. According to Aini et al. (2019), students as readers can describe the main ideas to be extracted from the collected information and combine them to generate new concepts. Once the readers can understand the content and communicate it to others, it means that the information obtained has been codified. Information can be codified depending on the skills, attitudes, knowledge, and social and cultural systems that affect the reader (Freebody and Luke 1990, p. 8).

In the process of comprehension, readers need to draw conclusions that connect textual elements with the background knowledge required to fill in the aspects of the text that cannot be explained. Readers fill in the blanks in the text to reveal the meaning of the text. The sentence does not explicitly contain any meaning/message. The message is implied or vague, but it can guide the readers to build a representation of meaning.

The students make the scheme of knowledge in the perspective of inference in a declarative way, conveying facts and ideas in a text with a cultural context. They reflect, understand, and look for information needed to solve a problem. This series of processes is closely related to the view that literacy learning is a developmental process that occurs in a sociocultural context (Oakley 2011, p. 281). Some of the strategies to get the students' responses are asking them to have self-assessment and self-reflection and encouraging them to articulate their thoughts before, during, and after reading. This kind of assessment refers to a representation of the development of multidimensional literacy comprehension. The lingual, logical, social, and cultural dimensions include students' comprehension at the codization, semantic, pragmatic, and critical analytic levels.

Concerning the students' comprehension, we can say that they are actively using their cognitive resources to understand the course of story events by building their intellectual patterns. This is supported by Woolley, (2010, p. 108) that a person's reading comprehension ability can be improved by inferential reading comprehension strategies that involve verbal and visual processes, facilitating the construction of a mental model Page's (2006, p. 802) mental representation in a more detailed narrative text. The mental model is a dynamic, constructive process, determined in part by the readers' interaction with the structure of the text and the content of the story. In the case of reading a text, someone will get the whole picture of the situation that is told and will not interpret it word for word or sentences that stand alone.

4.5.*Type of Inference: Referential*

Text that elicits inference:

What does "*Wenn » die letzte Chance « nicht half, war auch die letzte Hoffnung dahin*. (If the "last chance" doesn't help, the last hope will be lost)" in the paragraph mean?

(Data code: DK/Inf.04)

Student's inference:

Keine Chanche bedeutet keine Hoffnung (no chance means no hope). It is because the beginning of the sentence describes that the last chance given means making the children have bad behavior by letting them begging to survive. If begging no longer becomes an opportunity to fulfill life needs, there is no hope at all to live.

(Data code: DK/Inf.04/CND)

Explanation:

The data generated (DK/Inf.04/CND) leads to the cognitive dimension. The active participation of the readers is indicated by the way they connect the written symbols with the world through their knowledge about language, text, and content so that textual meaning is created.

The involvement of knowledge to support readers' understanding of a text is explored in literal, inferential, and reactional ways. Literally, the questions that refer to the text ask the readers to reveal the details of the text. Inferentially, the questions ask why an event occurs and ask the readers to describe the events being told. Reactionarily, the questions ask the readers to express their personal opinion about the text or events in the text. These steps are taken based on what was conveyed by Scull (2010, p. 87) regarding the categories of teacher-student interaction in a text comprehension activity.

These activities are compatible with the multidimensional representation model proposed by Aini et al. (2019). Multidimensional refers to the lingual, logical, social, and cultural levels. At the logical level, with codified and semantic understanding, DK / Inf.04 data requires inference in terms of text conventions. In codification, students can describe the main ideas extracted from the collected information and combine them to generate new concepts. From the keywords, synonyms, or related terms, students can identify them. For example, the word "*die Letzte Chance*" (the last chance) is related to "*die Letzte Hoffnung*" (the last hope). The revealed information is that when the last hope does not help anymore, it means that the last hope has gone away. The sentence in the text is given the meaning that life depends on the last hope. If the last hope cannot sustain the continuation of life, their families will not last much longer. In this section, the readers are given more opportunities to think critically because of their involvement with the text's various meanings.

4.6. Type of inference: Thematic data inference

Text that elicits inference:

Er nannte ihm wichtige Abkurzungen und verriet ihm auch sonst noch ein paar Tricks. »Technik ist alles«, sagte Damani. »Was du nicht im Kopf hast, kriegst du in den Beinen nie.«

(He gave him some important summaries and still told some other tricks. "Technology is everything," said Damani. "What you don't have in your head, you won't have on your feet.)

(Data code: DK / Inf.06).

Student's inference:

"*Was du nicht im Kopf hast, kriegst du in den Beinen nie*" means what is not in your head will never be in your feet. In English, there is a proverb "Those who can't use their head, must use their back," which means "when you can't think, there will be consequences".

Explanation:

In Indonesian there is an idiomatic expression "*kerjacerdas*" (smart work) which means "We can still produce something with the least effort without needing to force ourselves." In my opinion, "*Was du nichtim Kopf hast, kriegst du in den Beinennie*" and "smart work" have the same meaning. By thinking and working smart, we can lighten the burden of our work. In the text, after Tadaki followed what Damani said, "*Technik ist alles*", the work became easier. "*Tadaki befolgte seine Rätschlage und fuhr schon bar kraftsparender. Gleichzeitig wurden seine Beine kräftiger, die Händer packten die Lenkstange fester, und er wurde geschickter im Verkehr.*" (Tadaki followed his advice and drove using the least amount of energy left. At the same time his legs became stronger, his hands gripped the handlebars tighter, and he became more adept at riding.)

(Data Code: DK / Inf.06 / WUF).

Data DK / Inf.06 "*was du nicht im Kopf hast, kriegst du in den Beinen nie*" explores the students' perceptions from the proverbs or expressions that apply the same in Indonesian. The result is that in the Data DK / Inf.06 / WUF. The equivalent proverbs or expressions are presented in Indonesian and in English. There is a proverb in English, "Those who can't use their head, must use their back," which means "when you can't think, there will be consequences." Meanwhile, there is the expression "smart work" in Indonesian, which means "we can still produce something with the least effort without forcing ourselves."

The data is classified as thematic inference because what the students convey is the text's main point or moral message. This proverb represents Tadaki's hard work to get to Bandung. The twists and turns of the Tadaki character in reaching Bandung with the various problems facing him is the core of the DWnB text.

4.7. *Type of inference: Character emotional reaction*

Text that elicits inference:

»*Wie heißt das Sprichwort? Langer Abschied zerreißt das Herz, kurzer Abschied sorgt für schöne Erinnerungen. – Also, leb wohl, Paitun, und freu dich: Nun hast du endlich doch noch Glück gehabt*.«

(What is the meaning of the saying? A long farewell tore hearts, a short goodbye reaped good memories. - Goodbye, Paitun, and be happy: Now you are finally enjoying your luck.)

(Data code: DK/Inf.13)

Student's inference:

This proverb's literal meaning is that the separation/loss of a loved one leaves a wound in the heart; however, fond memories with them will remain in the memory, just like "Out of sight, near to heart". The proverb "Out of sight, close to the heart" can apply in sad situations; even in this story's context, this proverb is appropriate to describe feelings of loss/grief. The proverb means that even if you do not live close to each other and/or have been left far away, the heart will always remember the memories left behind. This proverb is compatible with the proverb "*Langer Abschied zerreißt das Herz, kurzer Abschied sorgt für schöne Erinnerungen*". Not only is the meaning equal, but it also gives a sad effect when read.

(Data Code: DK / Inf.13 / KDW)

Explanation:

The inference refers to the character's emotion caused by or in response to an event or action. Data DK/Inf.13 "*Langer Abschied zerreißt das Herz, kurzer Abschied sorgt für schöne Erinnerungen. - Also, lebwohl, Paitun, und freudich: Nun hast du endlich doch noch Glück gehabt*." Indicates the character's emotional reaction type of inference. This sentence is interpreted as a farewell or loss of a loved one who leaves a wound in the heart; nevertheless, the fond memories with them will remain in memory. There is certainly a sad effect in it. The sad effect is caused by separation from the loved one, depicting feelings of loss or grief. The students reprocess the indirect meaning implied in the text to produce new information based on the previously known knowledge.

5. Conclusions

From the results and discussion above, it can be seen that in making inferences in a bicultural text, students tend to use superordinate goals which are based on available information with the background

of world knowledge. The students tried to construct representations of meaning within the framework of local and global coherence that reinforce events, actions, or circumstances into the text.

The results of this study produce the following propositions: Inference within the framework of cognitive dimensions is a form of student knowledge that allows him to unite pieces of information that further predict, conclude, and synthesize the meaning of the bicultural text "*Der Weg nach Bandung*".

The findings of this study ontologically result in a comprehensive science of literacy. Epistemologically, it produces an interdisciplinary approach. Axiologically, this study's results are useful for developing literal competencies, namely lingually, socially, culturally, and logically. Besides that, it also sharpens students' critical analysis regarding issues related to literature, culture, and identity in literary texts.

The results of research on inference have a contribution to literacy comprehension and teaching. The various inferences produced by students prioritize the broadness of vocabulary in predicting reading comprehension. Utilization of one's own cultural identity and foreign culture (German) in reading comprehension becomes a positive value in the intercultural learning process.

Limitation of the study

The limitation of this study is that the research was conducted only on the students with the criteria for German language proficiency level B1 which had been tested in four test subjects. Further research may employ students with broader levels to have a more comprehensive picture of students' inference. This study also involved a limited number of research subjects as respondents, so that the results could not be generalized to a larger number of subjects.

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