

A Comparative Study of Two Vocabulary Activities for Indonesian Language Learners

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Abstract

Previous work exploring vocabulary acquisition in second languages focuses on which words are most beneficial to learners, but there is less focus on systematic ways to instruct second language (L2) vocabulary acquisition. While rote memorization has been said to be the most effective and efficient way for L2 speakers to learn vocabulary, the importance of vocabulary for L2 acquisition is so vital that students and teachers should engage in any practice that bolsters word-knowledge (Read, 2004; Hellman, 2011; Nation, 2001). This study focuses on 10 discrete forms in Indonesian that learners have difficulty using (Nugraha, 2003). This study applied two interactive, color coded web-based tools: a flashcard activity and chart-based visual aid activity. The goal of this study is to determine the relative word-recognition effectiveness of an Indonesian-specific vocabulary activity compared to the more traditional method of flashcards for vocabulary recognition. Nine students of Indonesian as a foreign language (BIPA) participated in two word-learning phases, one with each activity, and they performed pre- and post-testing with a Lexical Decision Task. The quantitative comparison shows significant results in recognition of existing-word items introduced with both activities. The results provide further empirical evidence that instruction for vocabulary is an important part of developing foundational word knowledge and the understanding of new words.

The present study is an investigation of the relative success of two different vocabulary activities on word knowledge recall. Vocabulary instruction is an important area for all acquired languages. There are seemingly countless activities for vocabulary instruction in the language classroom, but careful selection of effective and enjoyable activities is helpful for both teachers and students alike. Motivated by several second language acquisition (SLA) concepts this study aims to explore the relative success of two different vocabulary activities for second and foreign language learners of Indonesian.

Understanding vocabulary acquisition (VA) has been of interest to both teachers and SLA researchers, as vocabulary affects all modes of language communication. Focus on the structures and linguistic patterns of a language may give insight to learners by helping them recognize word parts and how they work together to create meaning (Cintrón-Valentín & Ellis, 2016; Loewen, 2005). Further, lexical growth might be one of the most successful areas of SLA in adult populations (Hellman, 2011). Aside from just knowing various words in the target language, learners must also interact with new vocabulary in meaningful ways for word learning to occur (Loucky, 2006; Laufer & Hulstijn, 2001; Benjamin, 2013).

Two activities were compared in this study, flashcards and a visual-aid based activity that will be called “wordfields”. Flashcards are a widely used tool for VA, and their simplicity and popularity made them an easy choice for the traditional method in this comparison (Cannon et al., 2010; Zimmerman, 1997; Sökmen, 1997). I developed the wordfield visual-aid activity to help scaffold the different forms Indonesian words can take, to see if this attention to different word parts benefits Indonesian learners and served as the novel activity in this comparison. The success of VA, specifically word knowledge, in Indonesian language learners was analyzed through the use of word-identification as measured by a lexical decision task (LDT). This

experiment aims to answer this research question: Which activity, the wordfield activity or the flashcard activity, will result in greater increases in scores from the pre- to the post-test lexical decision task after the word learning phase?

Literature Review

Focus on Form and Forms

While implicit and explicit language teaching are often examined separately, neither is the sole answer for language instruction. In fact, both explicit and implicit ways of language learning and teaching are ineffective when utilized alone (Cintrón-Valentín & Ellis, 2016). Implicit learning could be beneficial to learners during the production phase of language learning, and explicit learning is one way to lay language foundations for implicit language development to build on (Loewen, 2005). For instance, Loewen's 2005 study showed that higher levels of vocabulary uptake were seen when students identified their own linguistics issues. There is not much support of incidental L2 form learning without the scaffolding of a language instructor (Read, 2004; Martinez, 2010; González-Fernández & Schmitt, 2017).

Instructed focus on L2 structures can lead to advantages in the acquisition of these forms for language learners (Cintrón-Valentín & Ellis, 2016). Input enhancement, such as highlighting target vocabulary words, draws learners' attention to the target (Cintrón-Valentín & Ellis, 2016). Different linguistic structures need different levels of explicit instruction (Cintrón-Valentín & Ellis, 2016). Similarly, different linguistic aspects also need to be learned through different types of practice and activities (Loewen, 2005). Implications for the effectiveness of this focus on form differs greatly across L2 acquisition studies (Swan, 2005).

There are two common practices of instructed language form learning (Loewen, 2018). Focus on Form (FoF) is the student centered approach of drawing attention to specific language forms during meaning-focused communication, either after a mistake is made by the language learner and the instructor offers a correction, or the student is interested in a specific form, even before a mistake in usage is made (Laufer, 2006; Loewen, 2018; Swan, 2005; Long, 2015b). Focus on FormS (FoFs) differs, where discrete teacher-generated language elements are instructed in lessons apart from meaning- or communication-focused practice of a language; usually presented in the pre-teaching phase (Laufer, 2006; Long, 2015b). FoF has the benefit of student-centered input and casts the student as a language user in communication with other language speakers (Laufer, 2006; Swan, 2005). FoFs consists of the teacher or the text-book pre-selecting items to focus on, casting the student in the less-involved role of language learner, but has the benefit of providing explicit grammar instruction or explicit word knowledge about tricky elements before students are expected to use those elements in communicative language practice (Laufer, 2006; Loewen, 2018; Long, 2015b).

Swan (2005) warns that FoF should not be the only approach taken to help language learners notice linguistic regularities of a language. The decontextualization of FoFs can cause instructed vocabulary activities to be repetitive, tedious, and even meaningless (Swan, 2005). To keep students engaged, using FoF and FoFs in a task-based classroom will help reap the benefits of contextualization (Swan, 2005). FoF is one of the three original methodical principles of Task Based Language Teaching (Long, 2015b). Task based instruction offers students facilitated, conscious noticing of formal features with the support of their instructor (Swan, 2005; Long 2015b). Consciousness raising activities often blur the line between FoF and FoFs activities (Long, 2015b).

Swan (2005) stated that there has been little empirical evidence for the actual benefits of either FoF or FoFs in relation to each other. However, Laufer (2006) found that both FoF and FoFs were beneficial to word learning in a study of vocabulary words both in and out of context. The comparison between FoF and FoFs showed the latter resulted in more retention of target word meanings (Laufer, 2006). This provides some empirical support for the importance of FoFs in vocabulary instruction. The comparison also showed support for explicit language learning being beneficial for remembering discrete language elements (Laufer, 2006).

Vocabulary and Second Language Acquisition

At present there are no widely accepted theories of VA, and more research needs to be done to understand this phenomenon. Most of the research done on vocabulary has focused on descriptions of the lexicon, not on a concept for the acquisition of new vocabulary across languages (Gass, 1988). There is also relatively little research on the presentation and practice of vocabulary learning in the second language classroom (Read, 2004). Renewed interest in the topic of vocabulary in SLA was seen starting again in the 1990s (Read, 2004; González-Fernández & Schmitt, 2017). At present there are many different approaches for instructed VA (Read, 2004).

Though other areas of SLA have been more widely researched there are several things that are known about the process of VA in a new language (Gass, 1988). Having a command of a large word base is paramount to language learners' success in their target language (González-Fernández & Schmitt, 2017). The words that make up this base knowledge need to be high frequency words—words that occur frequently in a language. Learning these high frequency words as word families, words that are inflected or closely derived from a head word, decreases the burden of learning (Nation, 2001). Further, incidental learning, simply understanding a

word's meaning through exposure via reading and listening in the target language, is slow, difficult, and perhaps not effective (Pellicer-Sánchez, 2011; Read, 2004). It has been shown that intentional learning of vocabulary, on the other hand, can lead to more retention of vocabulary when compared to incidental learning (González-Fernández & Schmitt, 2017). Teacher guidance and focused attention have better outcomes for vocabulary learning, as found during an examination of the key concepts of VA in the current literature (González-Fernández & Schmitt, 2017). Teacher instruction for VA should also encourage students to have cognitive engagement for long-term learning of new vocabulary items, through depth of processing activities or classroom tasks, even in environments with rich linguistic input (Read, 2004; Martinez, 2010; González-Fernández & Schmitt, 2017).

Nation (2001) posits high frequency words are so vital to language learning that teachers and students should use any means they can to learn these vocabularies. Read (2004) suggests, too, that depth of knowledge of vocabulary is needed for students to be successful language learners, especially in reading comprehension. In order to gain depth of knowledge, students should focus on formal features, syntactic functions, register characteristics, collocations, spelling, derivational information, associations (i.e., semantic), polysemy, and other elaboration techniques (Read, 2004; González-Fernández & Schmitt, 2017; Pellicer-Sánchez, 2011). Especially important to Indonesian is derivational information. This will be explained further in the Indonesian Linguistics section. These aspects of word knowledge are built through experience, and not through associations to the first language (L1) (González-Fernández & Schmitt, 2017). Language teachers are encouraged to teach lexicon building techniques to students, with less focus on teaching singular vocabulary items (Martinez, 2010). Read (2004) suggests that students need to feel a need to achieve word knowledge, and that teachers should

give students space to search for deeper word knowledge information as well as evaluate how that information applies to word use.

Both the audio-lingual method and the communicative approach offer little support to students who wish to grow their lexicon, and teacher guidance is a necessity for L2 word acquisition (Read, 2004; Martinez, 2010). Read (2004) calls for the use of VA techniques that have fallen out of fashion, such as rehearsal, rote learning, and other such strategies. Hellman (2011) found that these types of word learning strategies can have a positive effect on VA, even in adult learners. After decades of word study, L2 vocabulary size and depth has been seen to be like native, and Hellman's findings suggest that lexical skills is the most successful area of SLA for adult L2 learners (Hellman, 2011). González-Fernández and Schmitt (2017) state there are numerous potential activities for VA, but "we do not have a clear idea of their relative effectiveness" (p. 289) up to this point.

Teaching Methods for Second Language Vocabulary Acquisition

There are two applicable hypotheses of VA for this study. One theory for VA is that of the Involvement Load Hypothesis (ILH), the other is the Depth of Lexical Processing Hypothesis (DLP). In ILH VA tasks can be rated by their level of involvement; how much they engage a learner in the process of learning new words (Laufer & Hulstijn, 2001). The DLP suggests that there is a direct relationship between the retention of new vocabulary words and the amount of cognitive energy put into learning these words (Schmitt, 1997, as cited in Loucky, 2006; Zhang & Lu, 2015). The involvement in ILH has been clarified as *need, search, and evaluate*. A learner must have a need to learn a new vocabulary word, even if that need is just to complete the VA task (Laufer & Hulstijn, 2001). To understand the meaning of a new vocabulary item, learners then must search for the meaning in some way. Finally, the vocabulary word must be evaluated,

by comparing the target vocabulary word against the other words in the task (Laufer & Hulstijn, 2001). The involvement level of each activity can be gauged based on how many, or how deeply, these criteria are covered in a task. The involvement load in ILH functions like the depth of processing in DLP. The processing of word knowledge is the foundational step in eventual use of language (Benjamin, 2013). For vocabulary introduced in language courses, a teacher can raise or lower the involvement load by adjusting the cognitive demands of the vocabulary activity (Loucky, 2006; Phillips et al., 2008). The higher the involvement load, or the deeper the processing, the better the retention of new vocabulary items (Laufer & Hulstijn, 2001; Zhang & Lu, 2015; Benjamin, 2013).

Intentional learning for VA is efficient, convenient, and has been found to be effective for L2 learners (Elgort, 2011; Nation, 2013; Carter, 1998). The *need, search, and evaluate* process posited by ILH aligns with learners' psychological VA needs which are *noticing, retrieval, and elaboration* (Nation, 2013). Retrieving word knowledge is essential for word learning to take place, but first a memory of the word must be made by noticing. One way in which learners can access productive retrieval is by recognizing the written form of the target vocabulary word (Nation, 2013). It is important to note that learners should not have access to both the form and the meaning in intentional VA tasks. Encouraging students to retrieve either form or meaning during a VA task is essential for word learning. Further, learners should not be encouraged to only learn vocabulary through intentional learning (Nation, 2013; Elgort, 2011).

Rich and meaningful language samples are best for incidental and intentional VA alike, though materials for intentional learning should have both quantity of input of a target form as well as encourage learners' deliberate attention to the target (Nation, 2013; Elgort, 2011). Another important VA factor is deliberate attention to the language system, such as the way

word features function together, as fluency cannot happen until learners are in control of the system (Nation, 2013). Materials that encourage deep processing, where students must notice, retrieve, and elaborate on target words are the most effective for VA (Elgort, 2011). VA materials can be developed to ensure these three levels of task load and cognitive involvement are met for learners.

Elgort (2011) found learners must pay attention to both form and meaning in separate tasks to truly grasp target words. Word lists and word cards can be used to introduce discrete items, providing learners with meaning by pairing new vocabulary with their bilingual translation or a definition (Elgort, 2011). These practices are especially effective for beginners (Carter, 1998). Beginners might also benefit from mnemonic devices, like the keyword technique, which calls for learners to create linking associations of pictures or nonsense ideas to a target vocabulary (Carter, 1998). To help develop fluency, words can be presented in context, or through cloze tests and gap fill activities (Carter, 1998; Laufer & Hulstijn, 2001). For more advanced learners, new vocabulary should be introduced through word sets or grids that encourage syntagmatic relationships through thematic clusters and generative use in order to encourage depth of word knowledge (Elgort, 2011; Carter, 1998; Read, 2004). Collocates of the target vocabulary word can be presented in groups or introduced with scales to clarify the intensity of thematic words (never, rarely, sometimes, often, always) (Carter, 1998).

The further learners advance in a language, the more vocabulary materials should encourage deep processing of target vocabulary through keyword mnemonics and semantic mapping (Elgort, 2011). Other vocabulary tools that utilize a graphic organization method for vocabulary words, such as semantic grids to present thematic vocabulary with associated adjectives or other parts of speech, or the pairing of vocabulary items with other word

associations like synonyms, clang associations, paradigmatic or syntagmatic words, or even images can help deepen word knowledge (Carter, 1998; Phillips et al., 2008). Learning logs, cued and free recall, or sentence cloze tests and sentence anomaly tasks also have their place in the repertoire of vocabulary materials (Elgort, 2011). Even with all these options for vocabulary material creation, it seems that rote memorization, bilingual translation, and use of glossing has benefits for all levels of learners, and may be essential for “durable” L2 VA (Carter, 1998; Read, 2004; Elgort, 2011; Benjamin, 2013, p. 69).

Flashcard Rationale

The literature on VA should be encouraging to language teachers and researchers, as the phenomenon is already starting to be detailed. The motivations for my study have come from what the field has already published as far as defining Indonesian specific struggles for VA, theories on how to scaffold vocabulary activities for BIPA learners, and ways to assess if Indonesian-specific vocabulary activities are effective.

To compare the success of the Indonesian specific vocabulary activity I developed, a comparison activity was needed. To explore the research question, I selected a traditional method of VA for this comparison. Flashcards were chosen for this comparison, as this method is used widely in L2 VA (Hiebert, 2005; Beck et al., 2013; Cannon et al., 2010; Zimmerman, 1997; Sökmen, 1997; Nakata, 2011). Regardless of language, L1-L2 translations, definitions, and paired associates are used in and out of the L2 classroom, more often than not in the form of flashcards (Hiebert, 2005; Beck et al., 2013; Cannon et al., 2010; Zimmerman, 1997; Sökmen, 1997; Nakata, 2011). Other studies have found that flashcards are lacking for VA toward effective language use (Bromley, 2004; Phillips et al., 2008). These conflicting ideas surrounding flashcards was a motivating factor to examine whether the traditional method is as successful as

earlier studies suggest, or if a different activity is more effective for VA in Indonesian. This question will be explored especially around the facets of word parts and forms.

Indonesian for Foreign Speakers and Vocabulary Instruction

Indonesian is the fifth most widely spoken first language in the world (Muliastuti, 2017). As a foreign language it is taught in ASEAN countries—Vietnam, Malaysia, Singapore, Brunei Darussalam—and outside of South East Asia—in Australia, the USA, Canada, Russia, Korea, Japan, and Germany. It is the fourth most popular foreign language taught in Australia (Muliastuti, 2017). The field of education and learning Indonesian as a foreign or second language is called *Bahasa Indonesia bagi Penutur Asing (BIPA)* (Indonesian for foreign speakers). The field of BIPA is concerned with teaching Indonesian as a second or foreign language (Muliastuti, 2017).

Most BIPA studies are descriptive studies of language use, and tend to focus on L2 writing (Suyitno, 2007; Riana, 2018; Nugraha, 2003; Defina, 2017). Currently it is unclear what Indonesian language specific tools work best for VA. This study aims to add to the BIPA literature on ways to successfully support learners through VA.

Indonesian Linguistic Elements

In Indonesian, morphology is entirely derivational (Musgrave, 2001). This means there are no markers on words to denote gender, time, case, aspect, or mood (Musgrave, 2001). All words in Indonesian are composed of a root word. To change the meaning of a word, or to create a grammatically correct sentence, these root words can take on affixes. In Indonesian there are prefixes, suffixes, and circumfixes. For the purposes of this study participants were trained on 10 different affixation patterns, to help them recognize existing forms of Indonesian words.

Participants were given support on three different types of words, active verbs, passive verbs,

and nouns. I created the following Indonesian sentences and English translations, and they were checked for accuracy by language informants (Laily Lurushati Muharra, M. Pd, personal communication, March 5, 2020; Emma Eunike Inserensora, S. Pd., personal communication, March 6, 2020).

Active Verbs

There are two prefixes and two suffixes that derive root words into active verbs that were focused on for this study. The first affix is the prefix *ber-*, which can be added to noun or verb root words to create intransitive verbs. At the sentence level, it is understood that the subject does the activity indicated by the root word when it occurs with the *ber-* prefix (Wisma Bahasa, 2014). See example (1).

The other three active verb affixes can be referred to as the *meN-* family. This group comprises the prefix *meN-*, and the two prefix-suffix combinations *meN-* *-i* and *meN-* *-kan*. The prefix *meN-* can be added to noun or verb root words to create active transitive verbs. Not all active verbs require this prefix, and it is often dropped in informal speech (Rafferty et al., 2014). Capital N in *meN-* forms denotes ‘nasal’. Sound changes, which are reflected in spelling changes, can be observed based on the first sound of the root being derived (Wisma Bahasa, 2014). See example (2).

The combination of prefix and suffix *meN-* *-kan* can be affixed to verb, noun, and adjective root words to form transitive causal verbs. At the sentence level this affix indicates that the subject of the sentence causes someone or something to become changed (Wisma Bahasa, 2014). See example (3).

The combination of prefix and suffix *meN-* *-i* can be affixed to verb, adjective, or noun root words to create transitive locative verbs. The *meN-* *-i* verb indicates that the direct object that follows is a location (Rafferty et al., 2014; Wisma Bahasa, 2014). See example (4).

(1) *Kita harus ber-gegas agar kita tidak ketinggalan kereta.*

We must VI-hasten in order to we not left behind train

‘We have to hurry so we don't miss the train.’

(2) *Dia mem-beli nasi kuning di pasar.*

3SG ACT- buy rice yellow at market

‘She/he buys yellow rice at the market.’

(3) *Saya mem-(p)anas-kan nasi kuning tadi pagi.*

I ACT-hot-CAUS rice yellow earlier morning

‘I heated the yellow rice this morning.’

(4) *Inggris sudah men-duduk-i Irlandia*

England already ACT-sit-LOC Ireland

selama 800 tahun.

as long as 800 year

‘England has occupied Ireland for 800 years.’

Passive Verbs

There are three affixes that derive root words into passive verbs for the purposes of this study. These are collectively considered the *di-* family and are derivationally related to the active counterpart the *meN-* family. The *di-* family is composed of three affixation patterns, three prefixes and two suffixes (Wisma Bahasa, 2014).

The prefix *di-* passivizes *meN-* verbs. The combination of the prefix *di-* and two suffixes create the *di-* *-kan* and *di-* *-i* forms, which passivize *meN-* *-kan* and *meN-* *-i* verbs, respectively (Rafferty et al., 2014). The suffixes *-kan* and *-i* are causative and locative derivations, just as seen in the passive forms above. Tense is understood based on the context of the sentence and the time of day the sentence is being heard, relative to the information in the sentence. See examples (5)-(7) to see the active to passive form changes.

(5) a. *Dia* *mem-beli* *nasi* *kuning* *di* *pasar.*
3SG ACT-buy rice yellow at market
'She bought yellow rice at the market.'

b. *Nasi* *kuning* *di-beli* *di* *pasar.*
Rice yellow PASS-buy at market
'Yellow rice is bought at the market.'

(6) a. *Saya* *mem-(p)anas-kan* *nasi* *kuning* *tadi* *pagi.*
I ACT-hot-CAUS rice yellow earlier morning
'I heated the yellow rice this morning.'

b. *Nasi* *kuning* *di-panas-kan* *tadi* *pagi.*
Rice yellow PASS-hot-CAUS earlier morning
'Yellow rice was heated this morning.'

(7) a. *Inggris* *sudah* *men-duduk-i* *Irlandia*

England already ACT-sit-LOC Ireland

selama *800* *tahun.*

as long as 800 year

‘England has occupied Ireland for 800 years.’

b. *Irlandia* *sudah* *di-duduk-i* *selama* *800* *tahun.*

Ireland already PASS-sit-LOC as long as 800 year

‘Ireland has been occupied for 800 years.’

Nouns

Three different affixes result in nouns in this study. These are the three circumfixes *per- -an*, *peN- -an*, and *ke- -an*. The circumfix *per- -an* is a nominal form, creates stative nouns, and generally is derived from verb forms that use the *ber-* prefix (Rafferty et al., 2014; Wisma Bahasa, 2014). The circumfix *peN- -an* is a nominalizing form based on *meN-* verbs, and follows similar sound changes as that of *meN-* nasalization. These nouns are based on the root verb (Rafferty et al., 2014). The circumfix *ke- -an* creates abstract nouns from noun, verb, and adjective root words (Wisma Bahasa, 2014; Rafferty et al., 2014). See examples (8)-(10) for an illustration of these forms.

(8) a. *Saya* *ber-tanya* *kepada* *guru* *tentang* *iklim*
 1SG VI-ask to teacher about climate
di Hawaii.

in Hawaii

‘I ask my teacher about the climate in Hawaii.’

b. Per-tanya-an saya tentang iklim di Hawaii
 NOM-ask-STAT 1SG about climate in Hawaii
dijawab oleh guru saya.
 PASS-answer by teacher POSS

‘My question about the climate in Hawaii was answered by my teacher.’

(9) a. Dia mem-beli nasi kuning di pasar.
 3SG ACT-buy rice yellow at market

‘He/she bought yellow rice at the market.’

b. Pem-beli-an nasi kuning sudah dilakukan
 NOM-buy-NOM rice yellow already PASS-conduct-CAUS
pagi ini.
 morning this

‘The purchase of yellow rice was made this morning.’

(10) a. Dingin

cold

‘cold’

b. Ke-dingin-an di Chicago diperburuk karena
 NOM-cold-AB at Chicago PASS-make worse because
angin kuat.
 wind strong

‘The coldness in Chicago was worsened by strong winds.’

The Problem

One of the language acquisition challenges for BIPA learners is the use of affixation (Nugraha, 2003; Suyitno, 2007; Defina, 2017; Riana, 2018). Nugraha’s (2003) descriptive study of mistakes made in BIPA writing outlines ten major problems. One of these is the use of

affixation. Nugraha points out affixes are often switched around in written production of Indonesian. Two examples follow, the first sentence of each example is that written by BIPA learners, and the second is the corrected sentence. Indonesian sentences, both correct and incorrect were described in detail from a 2003 study (Nugraha). English glosses and translation were completed by me, and checked for accuracy by language informants (Ruri Ariati, M. Pd., 3/5/2020; Emma Eunike Inserensora, S. Pd., 3/6/2020).

To better understand what exactly BIPA learners are getting wrong, let us take a closer look at a couple instances of mis-affixation. From the written examples it is clear that students have a large vocabulary base, and they have selected the correct root word to express their meaning. In example (11) the student opted to use the circumfix *per- -an*, which created a noun, when the *ber-* form is the appropriate affix to create an intransitive verb. In example (12) the student uses the passive form *di-* instead of the active form *ber-*, which created a word that does not occur in Indonesian, *dibicara*. Further, this sentence has an active structure, thus calling for the use of an active verb. From the wealth of examples in the literature on affixation misuse it is clear BIPA students struggle to keep the meaning and function of each derivation separate from the other forms.

(11) a. **Kalau orang tua per-cerai-an, anak -nya*
 If parents AB-divorce-VN child -DEF
sering tinggal dengan ibu -nya.
 frequently live with mother -POSS

‘If parents *a divorce, that child will often live with their mother.’

b. *Kalau orang tua ber-cerai, anak-anak -nya*

If parents VI-divorce children-DEF

sering tinggal ber-sama ibu -nya.

often live IV-with mother -POSS

‘If parents get divorced, their children often live with their mother.’

(12) a. **Untuk menulis presentasi ini, saya di-bicara*

For writing presentation this, I PASS-talking

dengan tiga orang.

with three people.

‘To write this presentation, I *not an existing word* with three people.’

b. *Untuk menulis presentasi ini, saya ber-bicara dengan*

For write presentation this, I VI-talking with

tiga orang.

three people.

‘To write this presentation, I talked with three people.’

This Study

Methods

Participants

The participant group of nine BIPA adult learners of Indonesian ranged in age from 22-39 years old with a mean age of 31.8 years. Over half of the participants had an exposure time of at least one year or longer, the shortest exposure time being three months, the longest four years. A minimum exposure time criterion for participants was one semester. The language background

of participants also ranged widely. Two participants reported only using Indonesian and English; trilingual participants cited use of German, Tagalog, or Alor Malay; quadrilingual participants cited use of Thai and Chinese, French and Spanish, or Spanish and German, while the most linguistically diverse participant reported use of Hungarian, Romanian, German, and Malay.

Design

This experiment consisted of four separate sessions: two testing sessions and two word learning sessions. Each session was spaced approximately a week apart; materials were sent to participants upon their completion of the previous session. In total, this study took about a month to complete, though each session was self-paced per participant. During the first session, participants completed a language background questionnaire, and a pre-test of their vocabulary knowledge, which consisted of a lexical decision task which is described in more detail below. Sessions two and three were both part of the word learning phase. Both activities for the word learning phase are described in more detail below. In session two, all participants received vocabulary list A, through the flashcard or the wordfield activity. In the third session, all participants received vocabulary list B, via the other activity from week two. Activities were counterbalanced in that five of the participants received flashcards with list A while the other four received wordfields and the opposite was applied to list B. All participants were instructed on all occurring words from lists A and B and completed both activities. In session four, participants completed another lexical decision task as a post-test as well as an opinion survey about the two vocabulary activities.

In order to reach a larger pool of Indonesian language learners, two web-based platforms were used for the purposes of this study. LabVanced is an online platform for running behavioral experiments, and operates like PsychoPy, with the added benefit of online sharing capabilities

(Finger et al., 2016). The first platform, LabVanced, was used for the testing phase and to collect survey information. Jamboard is an interactive whiteboard platform with co-authoring capabilities, hosted in the google suite. This platform was selected because some items could be fixed onto the workspace, and some items could be movable. Jamboard was used for the word learning phase.

Each session is estimated to have taken participants 15-20 minutes, totaling between 1 hour and 1 hour 20 minutes total across the four sessions. Participants were compensated for their time with a \$20 gift card.

Materials

Activity, flashcards. The flashcard activity featured a root word at the top left of each flashcard, with colored sticky notes for each existing derived form in Indonesian (of the 10 focus affixation patterns) under that, see Figure 1. Participants were given the freedom to place the sticky notes on their flashcards however they liked. On the right side of the flash card participants were given sentences containing each of the target existing words from newspaper articles, (Kompas, see Appendix C). Participants were asked to search for the derived form of the root word in each of the sentences, and underline each. They were then instructed to type the full form onto the colored sticky notes. See a participant completed example in Figure 2.

A color key was provided to participants. Active verbs were colored pink. Participants were asked to underline active verbs with the red pen. Passive verbs were colored green. Participants were asked to use the green pen for identifying these words. Nouns were coded blue, and participants were asked to use the blue pen to highlight these words. Yellow and orange sticky notes were coded to mean *me-* *-i* and *meN-* *-kan* words, respectively. Participants were

asked to use the yellow pen for these words. This slight mismatch of colors is due to limitations of the Jamboard platform.

Participants were guided through four example flashcards before they were asked to complete their own. Participants completed flashcards for seven root words for this activity. 37 complex words were presented for List A and 38 complex words for List B. Across examples and self-completed flashcards participants were exposed to 11 root words and 60 complex words, if they completed the flashcard activity with list A, or 11 root words and 61 complex words if they completed this activity with list B. I have estimated that each participant took between 15 and 20 minutes to complete the flashcard activity.

Figure 1

An example of a flashcard, before participant interaction.

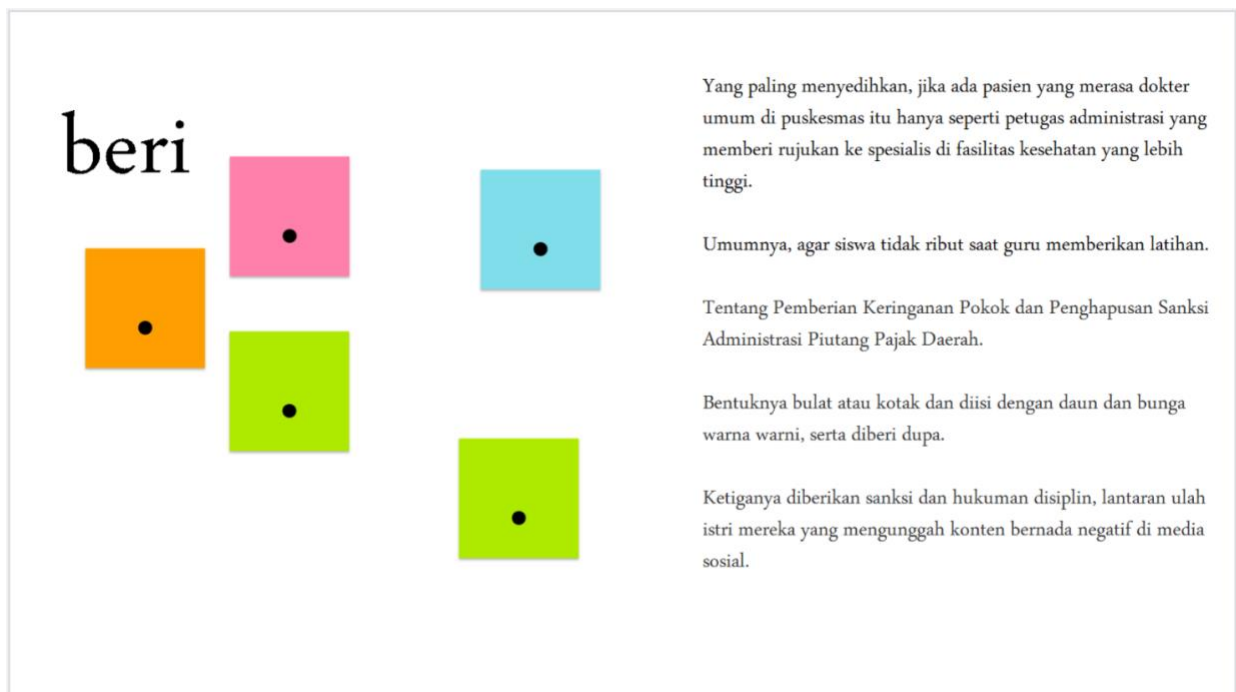
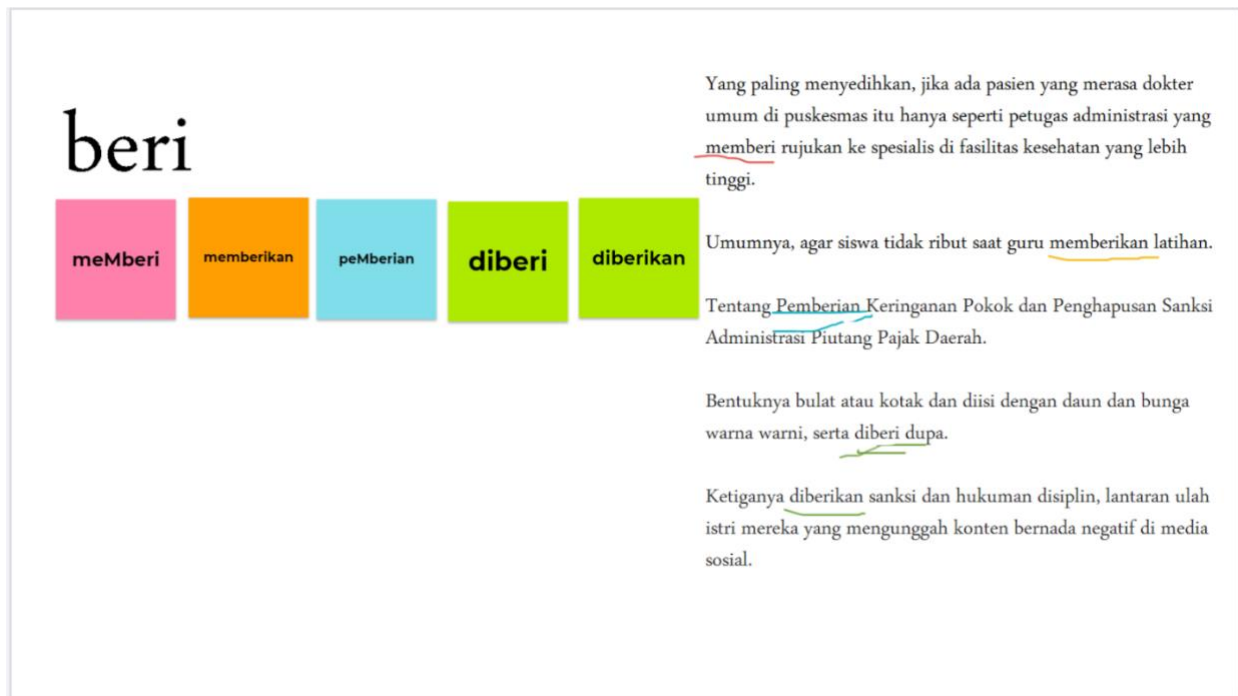


Figure 2

An example of a participant-completed flashcard, with appropriate color-coding.



Activity, wordfield. The wordfield activity featured a root word in the center of a wheel-shaped graphic organizer on the left side of the activity, see Figure 3. The same colored sticky notes for each occurring derived form, as in the flashcard activity were present, only this time the colored sticky notes each had a fixed place around the outside of the wordfield. On the right side of the wordfield participants were given the same sentences as the flashcard activity. Participants were asked to search, identify, and color code target derived forms in the same way as in the flashcard activity. They then typed the full form onto the colored sticky notes, that were in the appropriate place around the wordfield. See an example in Figure 4.

A color key was provided to participants. All color coding was the same for the wordfield activity as the flashcard activity. The only difference for this activity is that active verbs, pink, were at the top of the wordfield. Yellow and orange derived forms were on the right side of the

wordfield. Passive, green coded words were in the lower right of the wordfield, and blue nouns were on the left side of the wordfield. Placement and color-coding were developed by me with help from a language informant; placement and color are based on the linguistic relations between affixes (Ahdarini, S. Psi., personal communication, July, 2019).

Participants were guided through four example wordfields before they were asked to complete their own. Participants completed wordfields for seven root words for this activity. 37 complex words were presented for List A and 38 complex words for List B. Across examples and self-completed wordfields participants were exposed to 11 root words and 60 complex words, if they completed the flashcard activity with list A, or 11 root words and 61 complex words if they completed this activity with list B. I have estimated that each participant took between 15 and 20 minutes to complete the flashcard activity.

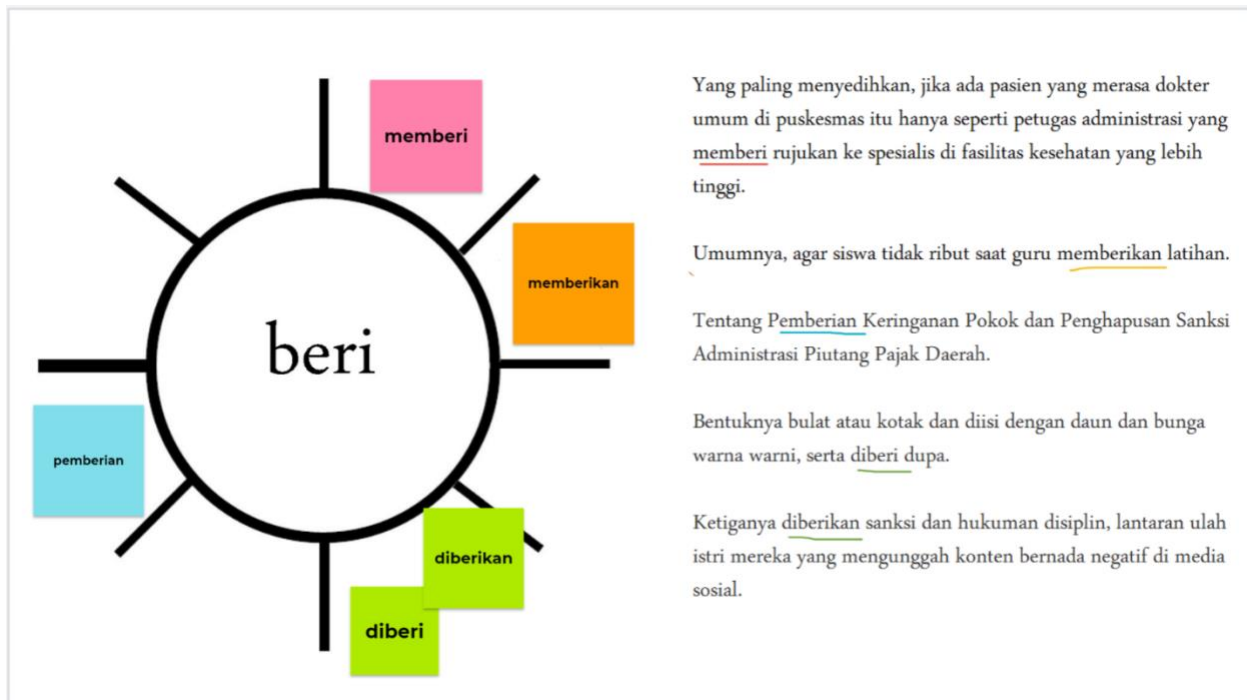
Figure 3

An example of a wordfield, before participant interaction.



Figure 4

An example of a participant-completed flashcard, with appropriate color-coding.



Pre- and post-test, lexical decision task. The LDT is a form-identification task that has been used in the past to help estimate relative vocabulary size, though this is not the typical use for LDT. In this type of activity, participants are given occurring words and contrived words that follow the morphophonemic rules of a given language, and they are asked to identify if a word occurs or not in the focal language. For an example of vocabulary size estimations in English, Dutch, or German the LexTALE website has a quick LDT (Lemhöfer & Broersma, 2012). I chose to use LDT to lower the cognitive burden on participants; I wanted the study to not be a translation task between English and Indonesian, but rather just an identification of Indonesian forms. As not all participants used English as an L1, I also thought eliminating translation would be the best way to get a comparable measure across participants.

I created the LDT based around 12 root words in Indonesian. Eight of these roots were presented in the word learning phase. Four of these roots are from the instructed words in List A, four from instructed words in List B. The additional four were non-instructed words. In combination with the 10 focal affixation patterns there were a total of 120 logically possible root-affix combinations. 61 of these combinations are words that occur in Indonesian; they are words that can be defined in the dictionary and were printed in the newspaper articles utilized in the creation of the materials. 45 of these existing words were presented in the word learning phase of the experiment. Non-instructed words, termed List C, were presented to see if participants could extrapolate proper root-affix combinations onto novel words. See Table 1 below for an illustration of LDT items. A complete list can be found in Appendix D. All participants were instructed on the same 45 items from the pool of 61 existing words on the LDT via the two activities in the word learning phase.

All 120 items were included in the LDT. Both the pre- and post-LDT had identical items. Items were presented in random order. For an example of what participants saw in the LDT see Figure 5. Participants selected between two options for each item: a true occurring form in Indonesian, “*kata nyata*,” or a contrived form that does not occur in Indonesian, “*bukan kata nyata*.”

Questionnaires. Participants were also given a background questionnaire in session one and an opinion survey in session four. See Appendices A and B for a complete list of these questions.

Table 1

Existing and contrived words compiled for the LDT testing phase.

Base	Possible Derived Form	Occurs in Kompas?	Activity A or B, or False word
kembang	kekembangan	N	F
kembang	berkembang	Y	B
kembang	mengembang	Y	B
kembang	mengembangkan	Y	B
kembang	mengembangki	N	F
kembang	perkembangan	Y	B
kembang	pengembangan	Y	B
kembang	dikembang	Y	B
kembang	dikembangkan	Y	B
kembang	dikembangki	N	F
belanja	kebelanjaan	N	F
belanja	berbelanja	Y	A
belanja	membelanja	N	F
belanja	membelanjakan	Y	A
belanja	membelanjai	N	F
belanja	perbelanjaan	Y	A
belanja	pembelanjaan	Y	A
belanja	dibelanja	N	F
belanja	dibelanjakan	Y	A
belanja	dibelanjai	N	F

Note. ‘A’ denotes words that were introduced in the second session, ‘B’ for words introduced in the third session, and ‘F’ stands for “false word.”

Figure 5

Three LDT questions.

The image shows a vertical list of three LDT questions, each with two radio button options. The first question is 'digagalkan' with 'kata nyata' (existing word) selected, indicated by a blue box. The second question is 'menyamakan' with 'bukan kata nyata' (not an existing word) selected, indicated by a red box. The third question is 'melengkapi' with no selection indicated.

digagalkan

kata nyata

bukan kata nyata

menyamakan

kata nyata

bukan kata nyata

melengkapi

kata nyata

bukan kata nyata

Note. Participants had to select if the word was an existing word in Indonesian (blue), or not an existing word (red).

Results

Pre- and Post-Test Scores

Scoring for the LDT was out of 120 possible points. 1 point was given for each occurring Indonesian word identified as an existing word, and 1 point was given for each word that does not occur in Indonesian that was identified as a false word. Words that were incorrectly identified were given a score of 0. Pre- and post-test scores were calculated by the number of correctly identified words out of the possible 120 total points. Total scores for participants will not be reported here, as test scores alone do not answer the research question. Instead, to identify

the relative effectiveness of each vocabulary activity, pre- and post-test scores for correct identification of Indonesian forms will be compared between the two vocabulary activities. An examination of both correctly identified existing words and correctly identified non-existing words can be found below.

Existing Words

Figures 6 and 7 show the form recognition growth for existing words (words that occur in Indonesian) per participant for each word learning activity. The average pre-test score for existing words in wordfields was 54.7%, with an average post test score of 74.8%. The average pre-test score for existing words flashcards was 66.4%, with an average post test score of 78.3%. The average growth in the LDT from pre- to post-test for existing words in the wordfield activity was 20%, and for the flashcard activity was 12%.

Paired sample t-tests were run in SPSS. A p-value of $p = .05$ is considered the alpha level for this study. The results from the pre-test ($M = 54.7$, $SD = 15.1$) and post-test ($M = 74.8$, $SD = 19.1$) for the wordfields task indicate that the word learning activity resulted in a significant improvement in existing word recognition, $t(8) = -3.28$, $p = .011$. The results from the pre-test ($M = 66.4$, $SD = 14.4$) and post-test ($M = 78.3$, $SD = 16.4$) for the flashcards task indicate that the word learning activity resulted in a marginally significant improvement in existing word recognition, $t(8) = -2.26$, $p = .054$.

To compare the relative effectiveness of both vocabulary activities for correct identification of word forms, a difference or growth score was calculated for each participant and activity by subtracting their pre-test from their post-test score. These difference scores are illustrated in Table 2. Mean differences scores in wordfields ($M = 20.0$, $SD = 18.5$) were numerically greater than those in the flashcard activity ($M = 11.9$, $SD = 15.8$). A paired sample t-

test was run between difference scores from the two activities in order to assess whether one led to greater improvement from pre- to post-test than the other. This test indicated that there was no significant difference between the growth scores of each activity for existing word recognition, $t(8) = 1.17, p = .274$.

Figure 6

Existing word scores in pre- and post-test Lexical Decision Task for wordfield activity.

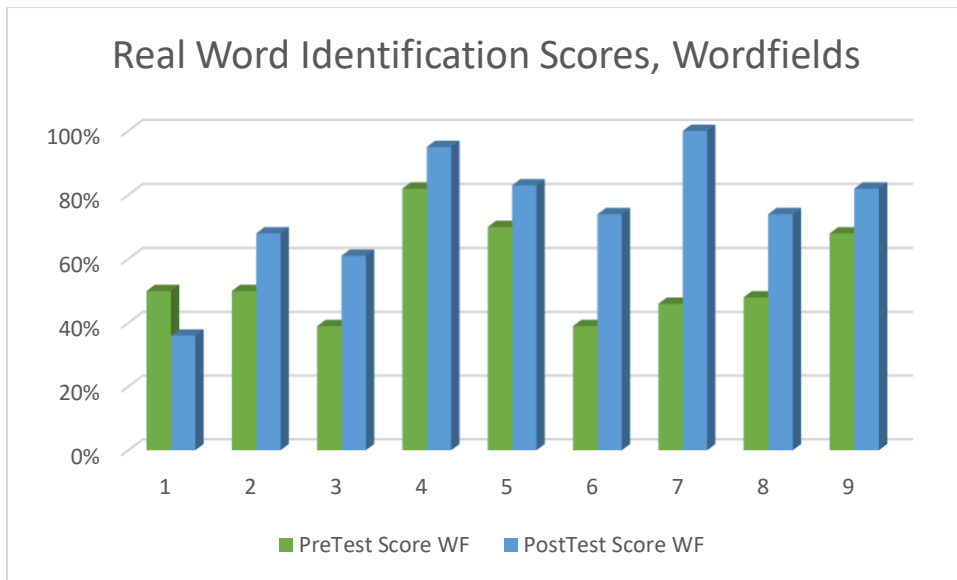


Figure 7

Existing word scores in pre- and post-test Lexical Decision Task for flashcard activity.

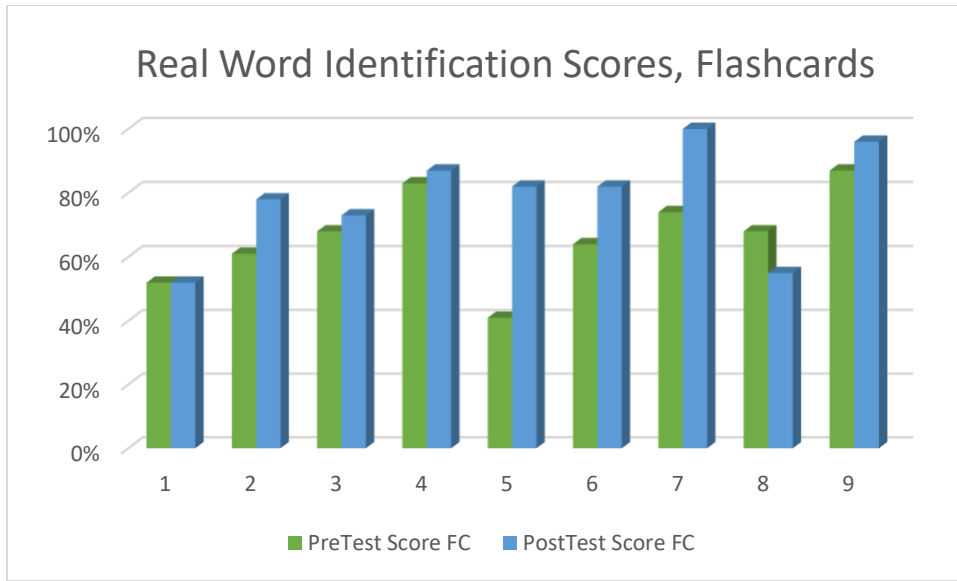


Table 2

Difference scores per participant between pre- and post-test scores for existing words in the LDT testing phase.

Participant	Wordfield growth	Flashcard growth
1	-14%	0%
2	18%	17%
3	22%	5%
4	13%	4%
5	13%	41%
6	35%	18%
7	54%	26%
8	26%	-13%
9	14%	9%

Non-existing Words

Figures 8 and 9 show the form recognition growth for non-existing words (words that do not occur in Indonesian) per participant for each word learning activity. Participants were not

instructed on non-existing words in the word learning phase. The average pre-test score for wordfields was 44.7%, with an average post test score of 31.8%. The average pre-test score for flashcards was 39.7%, with an average post test score of 25.1%. The average growth in the LDT from pre- to post-test for non-existing words in the wordfield activity was -13% correctly identified words, and for the flashcard activity -15% words.

Paired sample t-tests were run in SPSS. A p-value of $p = .05$ is considered the alpha level for this study. The results from the pre-test ($M = 44.8, SD = 8.8$) and post-test ($M = 31.9, SD = 19.7$) for the wordfields task indicate that the word learning activity resulted in a non-significant decline in word recognition for non-existent words, $t(8) = 2.0, p = .077$. The results from the pre-test ($M = 39.7, SD = 23.4$) and post-test ($M = 25.1, SD = 19.9$) for the flashcards task indicate that the word learning activity resulted in a marginally significant decline in non-existent word recognition, $t(8) = 2.26, p = .054$.

To compare the relative effectiveness of both vocabulary activities for correct identification of non-existing word forms, a difference or growth score was calculated for each participant and activity by subtracting their pre-test from their post-test score. These difference scores are illustrated in Table 3. Mean differences scores in wordfields ($M = -12.9, SD = 19.0$) were numerically smaller than those in the flashcard activity ($M = -13.2, SD = 20.4$). A paired sample t-test was run between difference scores from the two activities in order to assess whether one led to greater decline from pre- to post-test than the other. This test indicated that there was no significant difference between the scores of each activity for non-existing word recognition, $t(8) = .031, p = .976$.

Figure 8

Non-existing word scores in pre- and post-test Lexical Decision Task for wordfield activity.

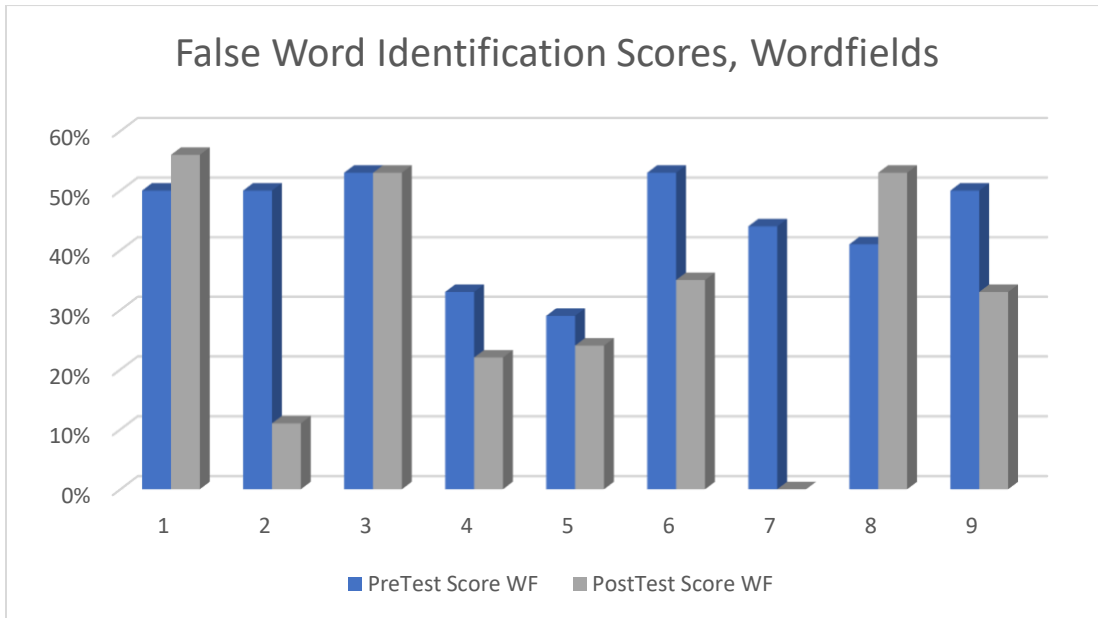


Figure 9

Non-existing word scores in pre- and post-test Lexical Decision Task for flashcard activity.

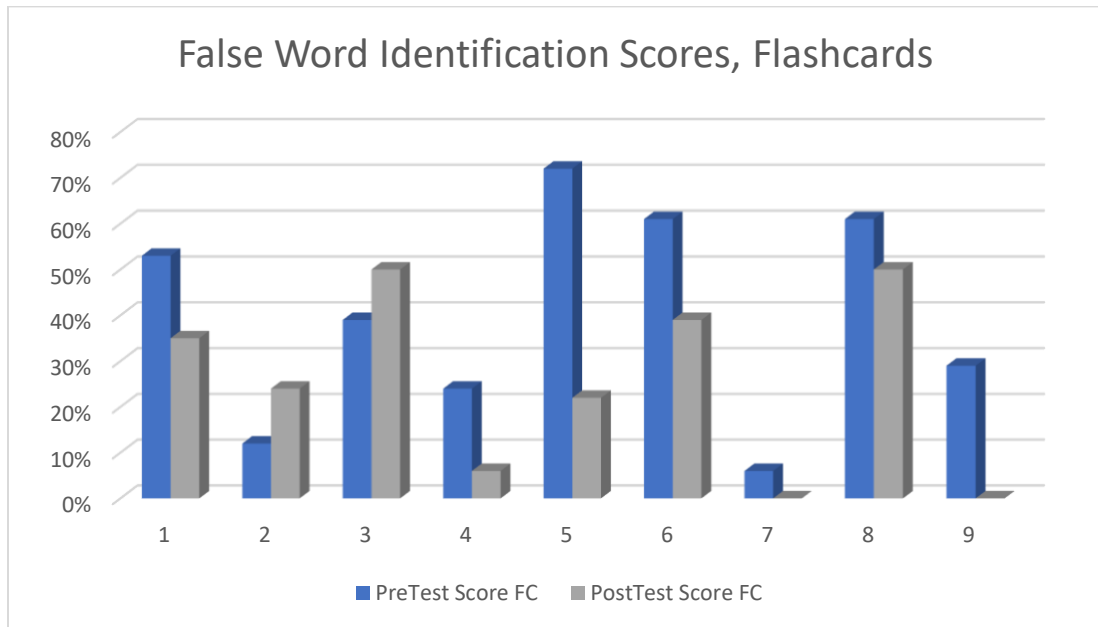


Table 3

Difference scores per participant between pre- and post-test scores for non-existing words in the LDT testing phase.

Participant	Wordfield growth	Flashcard growth
1	6%	-18%
2	-39%	12%
3	0%	11%
4	-11%	-18%
5	-5%	-50%
6	-18%	-22%
7	-44%	-6%
8	12%	-11%
9	-17%	-29%

Participant Opinions

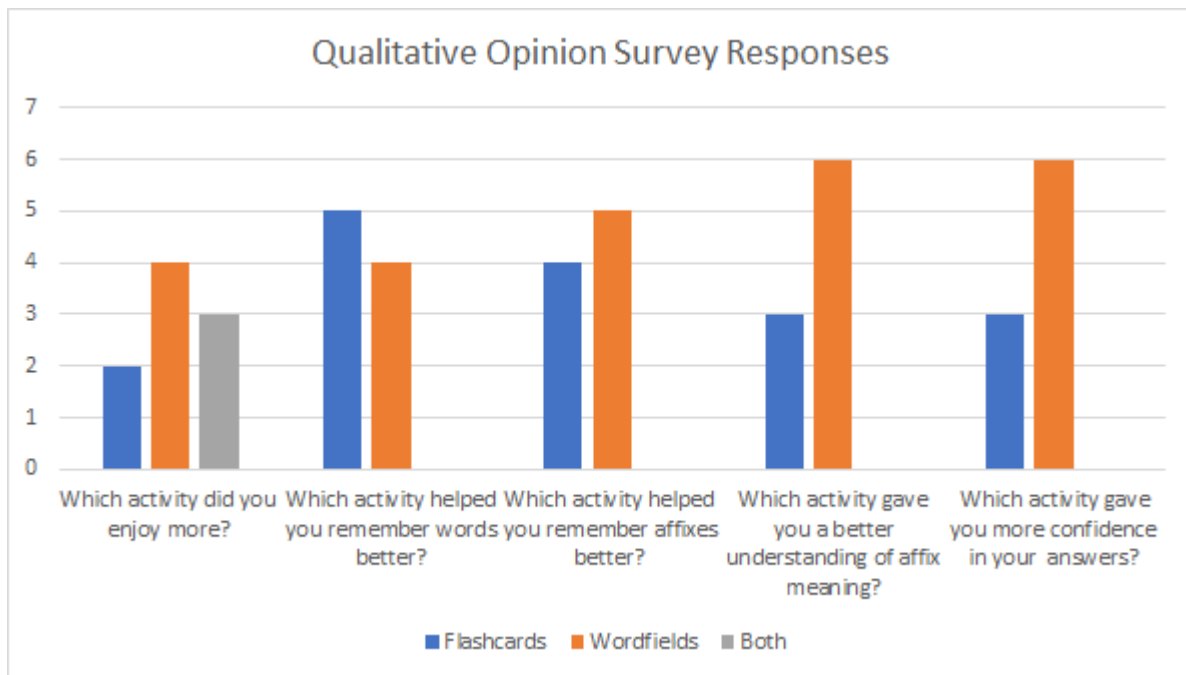
The opinions of the nine participants help me better understand the preference between vocabulary activities. Illustrated in Figure 10 are participant responses to a short survey given after the post-LDT, on the last day of the experiment. Participants were asked five opinion questions and asked to opt for the flashcard activity or the worldfield activity. The first question in the opinion survey that asked about enjoyment had three possible answers: wordfields, flashcards, or both. The following four questions only had two possible answers: wordfields or flashcards. There were 17 instances of preference for the flashcard activity, 25 instances of preference for the worldfield activity, and 3 instances where participants chose the option both. Flashcards were reported to be more successful than the wordfield activity for whole word recall. For remembering affixes, understanding affix meaning, and instilling confidence there was a preference for the wordfield activity. Overall, the activity enjoyed most was the wordfield activity. For a summary of responses to each question see Figure 10.

Participants were asked to explain their preferences. For those that preferred the wordfield activity participants stated that they enjoyed the more interactive nature of the activity,

and that they felt that they were creating something. With this activity they felt that they could recall specific affixes because of the color categorization and the spatial arrangement for the different linguistic functions. Wordfields were cited to encourage faster recall, and helped participants remember some affixes they often forgot in language use. For those that preferred the flashcard activity the explanations stated that the flashcards were also interactive, but easier to use than the wordfields. Participants enjoyed the additional freedom of the special arrangement on the flashcards, and that they had to write out the entire root + affix form. They felt they had an easier time identifying root words when seen in context, and they also liked the color categorization.

Figure 10

Participant opinions of vocabulary activities.



Discussion

The results of this experiment suggest that instructed vocabulary activities can have a positive and significant effect on the recognition of forms that occur in the instructed L2, Indonesian. Because of the small number of participants, conclusions cannot be made at this time as to which activity caused larger word form recognition in participants. The exploration of the research question found that scores on both the wordfield activity and the flashcard activity increased from the pre- to the post-test lexical decision task after the word learning phase, yet the magnitude of the gains in the two vocabulary activities was not significantly different.

The wordfield activity was found to be significant in the performance of occurring word recognition only in the pre- to post-test comparison. The wordfield activity was found to have non-significant effects on the word recognition for non-occurring forms. The flashcard activity was found to have marginally significant differences between the pre- and post-tests for the recognition of both occurring and non-occurring forms, gain and loss respectively. This might suggest that the linguistic focus of the wordfields activity is a better way to scaffold linguistic differences in Indonesian word forms than flashcards. These results might also suggest that wordfields are a better option for BIPA learners to recognize which forms do and do not exist in the language.

An experiment with more participants and more controlled conditions could give us more insight into the relative success of different vocabulary activities. Even though participants received only one training session on each of the target existing words and took between a week and two weeks between the word training phase and the post-test LDT, they still showed growth in their abilities to recognize existing words. This suggests that language-specific support for form recognition is beneficial during instruction of a second or foreign language. This is in alignment with findings from a previous study of FoFs (Laufer, 2006). It appears that FoFs

activities seem to be helpful for BIPA students in the recognition of existing Indonesian word forms.

There are some considerations about this study that need to be addressed. Participant relative exposure time to the language ranged widely. In a more controlled experiment, all participants would have more similar proficiency levels in order to better estimate word learning strategies for a specific population. Though Indonesian is not a commonly taught foreign language outside of Southeast Asia, resulting in a relatively small pool of participants for studies like these, a higher number of participants is needed before any true statistical conclusions can be drawn about vocabulary activities.

The two examined activities were framed as vocabulary learning, and it must be noted that all focus forms were complex root and affix combinations. Normally, vocabulary studies look at discrete items, or head words, and not on more complex items such as the ones found in this experiment. Due to Indonesian's solely derivational nature, linguistic differences between BIPA learners' first language and Indonesian must be considered. I am positing that in order to be a successful Indonesian language learner basic root word level vocabulary is not sufficient.

The focal forms for this experiment are not generally introduced at the beginning stages of Indonesian language instruction, and some forms are only addressed in intermediate to advanced classes (Rafferty et al., 2014; Wisma Bahasa, 2014). It is highly likely that those participants with the minimal exposure time of one semester did not have any previous exposure to items introduced in the word learning phase. Those with more exposure might have experienced all ten of the focal affixation forms during classroom instruction, but there is no guarantee that they have. The background questionnaire did not ask about specific affix form instruction, and future studies might find this information useful to have.

Both vocabulary activities focused solely on form and not on meaning. Even though the statistics for this experiment do not show a significant difference in word recognition between activities, there seems to be a preference for the wordfield activity in understanding word parts, and a preference for flashcards for whole word recall. The preference for wordfields could be due to the focused attention on Indonesian word parts encouraged by the activity, and how different affixes work with root words to create meaning, as seen in earlier studies (Cintrón-Valentín & Ellis, 2016; Loewen, 2005). The preference for flashcards might be explained as a comfort of use with the widely used format. To support students though VA, and ensure they can utilize these words in context, these activities cannot be presented alone. Other vocabulary techniques, especially meaning focused activities, should be paired with these form focused activities if they are to be utilized in the BIPA classroom.

Conclusion

Given the common issues that BIPA learners have with the use of different affixes in Indonesian, some support must be given in the classroom for the correct affix and root combinations that create existing words. Considerations must be taken when implementing form-focused activities in the BIPA classroom and meaning-focused activities should be paired with the two examined activities to bolster student success.

The outcomes of form focused training for BIPA students suggest that neither the Indonesian specific wordfield activity nor the more traditional flashcard activity were statistically more effective when compared to each other. There is some evidence that both activities help participants recognize word forms. Either activity might be a good option to use to scaffold proper word and affixation combinations in BIPA classrooms. There were some

differences between opinions for the examined activities. Consideration for student individual preference might be something BIPA instructors consider for implementation purposes.

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Appendix A

Formulir Pertanyaan Latar Belakang Bahasa--Language Background Questionnaire

Pertanyaan	Jawaban
Tingkat berapa Anda kelas Bahasa Indonesia yang paling baru? <i>What level was your most recent Indonesian course?</i>	
Berapa usia Anda? <i>How old are you?</i>	
Berapa lama Anda sudah belajar Bahasa Indonesia? <i>How long have you been studying Indonesian?</i>	
Di mana saja Anda sudah belajar Bahasa Indonesia? Silakan sebutkan nama sekolah, kota, program, dll. <i>Where have you studied Indonesian? Please list school, city, program, ect.</i>	
Bahasa apa yang Anda pakai saat tumbuh dewasa? <i>What languages(s) did you speak growing up?</i>	
Bahasa apa yang paling sering Anda gunakan? <i>What language do you use the most?</i>	
Sebutkan tempat-tempat yang menggunakan Bahasa Indonesia yang pernah Anda kunjungi! Silahkan sebutkan kota dan daerah. <i>What places have you visited that use Indonesian? Please list the city and area.</i>	

<p>Berapa lama Anda tinggal di tempat tersebut?</p> <p><i>How long did you stay at the above-mentioned places?</i></p>	
<p>Apakah Anda menggunakan Bahasa Indonesia di luar kelas? Sebutkan contohnya!</p> <p><i>Do you use Indonesian outside of class? Give an example.</i></p>	
<p>Berdasarkan tingkat kemahiran berbahasa, seberapa mahir Anda berbahasa Indonesia? Gunakan skala dari 1-10, 1 menjadi pemula lengkap, 10 benar-benar lancar.</p> <p><i>What proficiency level do you feel you are at in Indonesian? Use a scale from 1-10, 1 being complete beginner, 10 being completely fluent.</i></p>	
<p>Apakah Anda tahu bahasa selain Bahasa Inggris dan Bahasa Indonesia? Silahkan sebutkan semua bahasa yang lain Anda menggunakan biasanya.</p> <p><i>Do you know another language besides English and Indonesian? Please list all other languages you use habitually.</i></p>	
<p>Berapa lama Anda sudah belajar bahasa lain yang tersebut?</p> <p><i>How long have you been studying the above-mentioned language(s)?</i></p>	
<p>Menurut Anda, apa tingkat kemahiran Anda dalam bahasa tersebut?</p> <p><i>In your opinion what is your proficiency level in the above-mentioned language(s)?</i></p>	
<p>Apa motivasi utama Anda untuk belajar bahasa Indonesia? Contoh: Tujuan penelitian, tujuan pendidikan, tujuan warisan, tujuan</p>	

sosial, dll.

What are your main motivations for studying Indonesian? Ex: Research purposes, educational purposes, heritage purposes, social purposes, ect.

Appendix B

Opinion Survey

1. a. Aktivitas apa yang lebih Anda sukai?

Which activity did you enjoy more?

Flash Cards

Word Fields

Saya suka dua-duanya
I enjoyed them both

- b. Mengapa Anda lebih menikmatinya?

Why did you enjoy it more?

2. a. Aktivitas mana yang membantu Anda mengingat kata-kata dengan lebih baik?

Which activity helped you remember words better?

Flash Cards

Word Fields

- b. Mengapa menurut Anda itu membantu Anda mengingat?

Why do you think it helped you remember?

3. a. Aktivitas mana yang membantu Anda mengingat imbuhan dengan lebih baik?

(Imbuhan adalah me-, ber- per—an, dll)

Which activity helped you remember affixes better?

(Affixes are me-, ber-, per--an, ect)

Flash Cards

Word Fields

b. Dapatkah Anda memikirkan bagian spesifik dari kegiatan yang membantu Anda mengingat imbuhan?

Can you think of specific parts of the activity that helped you remember affixes?

4. a. Aktivitas apa yang memberi Anda pemahaman yang lebih baik tentang makna imbuhan?

Which activity gave you a better understanding of affix meaning?

Flash Cards

Word Fields

b. Imbuhan & fungsinya mana yang lebih masuk akal bagi Anda sekarang daripada sebelum Anda melakukan percobaan pembelajaran kata ini?

Which affixes & their functions make more sense to you now than before you did this word learning experiment?

An empty rectangular text input field with a light gray border. On the right side, there are three vertically stacked buttons: a small square with an upward-pointing triangle, a small square, and a small square with a downward-pointing triangle. On the bottom side, there are three horizontally stacked buttons: a small square with a left-pointing triangle, a small square, and a small square with a right-pointing triangle.

5. a. Aktivitas mana yang memberi Anda lebih percaya diri dalam jawaban Anda?

Which activity gave you more confidence in your answers?

Flash Cards

Word Fields

b. Dalam hal apa kegiatan itu membantu kepercayaan diri Anda?

In what ways did the activity help your confidence?

An empty rectangular text input field with a light gray border. On the right side, there are three vertically stacked buttons: a small square with an upward-pointing triangle, a small square, and a small square with a downward-pointing triangle. On the bottom side, there are three horizontally stacked buttons: a small square with a left-pointing triangle, a small square, and a small square with a right-pointing triangle.

Appendix C

Newspaper Articles from Kompas, 2019

Articles selected for inspection covered a broad range of topics. The titles of the nine examined articles '*Tekanan Global Sangat Serious*,' [Global Pressure is Very Serious], '*PBB Desak Akses Masuk ke Rakhine*,' [UN Urges Access to Rakhine], '*Nikmati Keceriaan Ramadhan Sembari Bermain Salju*,' [Enjoy the Joys of Ramadan While Playing with Snow], '*Iran Tidak Ingin Perang*,' [Iran Doesn't Want War], '*Kami Rita, 23 Kali di Puncak Everest*,' [We are Rita, Ascended to the Peak of Everest 23 times], '*Kelas Rangkap Perlu Strategi*,' [Duplicate Classes Need Strategy], '*Mahasiswa UGM Gagas Aplikasi Rekam Medis*,' [UGM Students Initiate Medical Record Application], '*Siapkan Anak Cakap secara Emosional*,' [Prepare Children to be Emotionally Capable], and '*Merkuri Dikirim Ilegal di Dalam Kelapa*,' [Mercury Illegally sent inside of a Coconut].

Appendix D

All items for the Lexical Decision Task

Instructed existing words occurred in lists A and B. C was a control set to see if students could extrapolate forms without instruction. F represents “false” words that are non-existing words in Indonesian.

No.	Base	Possible Derived Form	Occurs in Kompas?	List A, B, C or False Word
1	sama	kesamaan	Y	A
2	sama	bersama	Y	A
3	sama	menyama	N	F
4	sama	menyamakan	Y	A
5	sama	menyamai	Y	A
6	sama	persamaan	Y	A
7	sama	penyamaan	Y	A
8	sama	disama	N	F
9	sama	disamakan	Y	A
10	sama	disamai	Y	A
11	lengkap	kelengkapan	Y	A
12	lengkap	berlengkap	N	F
13	lengkap	melengkap	N	F
14	lengkap	melengkapkan	Y	A
15	lengkap	melengkapi	Y	A
16	lengkap	perlengkapan	Y	A
17	lengkap	pelengkapan	N	F
18	lengkap	dilengkap	N	F
19	lengkap	dilengkapkan	N	F
20	lengkap	dilengkapi	Y	A
21	Rupa	kerupaan	N	F
22	Rupa	berupa	Y	A
23	Rupa	merupa	N	F
24	Rupa	merupakan	Y	A
25	Rupa	merupai	Y	A
26	rupa	pengrupaan	N	F
27	Rupa	perupaan	N	F
28	Rupa	dirupa	N	F
29	Rupa	dirupakan	Y	A
30	Rupa	dirupai	Y	A

31	belanja	kebelanjaan	N	F
32	belanja	berbelanja	Y	A
33	belanja	membelanja	N	F
34	belanja	membelanjakan	Y	A
35	belanja	membelanjai	N	F
36	belanja	perbelanjaan	Y	A
37	belanja	pembelanjaan	Y	A
38	belanja	dibelanja	N	F
39	belanja	dibelanjakan	Y	A
40	belanja	dibelanjai	N	F
41	lanjut	kelanjutan	Y	B
42	lanjut	berlanjut	Y	B
43	lanjut	melanjut	N	F
44	lanjut	melanjutkan	Y	B
45	lanjut	melanjuti	N	F
46	lanjut	perlanjutan	N	F
47	lanjut	pelanjutan	Y	B
48	lanjut	dilanjut	Y	B
49	lanjut	dilanjutkan	Y	B
50	lanjut	dilanjuti	N	F
51	kembang	kekembangan	N	F
52	kembang	berkembang	Y	B
53	kembang	mengembang	Y	B
54	kembang	mengembangkan	Y	B
55	kembang	mengembangki	N	F
56	kembang	perkembangan	Y	B
57	kembang	pengembangan	Y	B
58	kembang	dikembang	Y	B
59	kembang	dikembangkan	Y	B
60	kembang	dikembangki	N	F
61	mukim	kemukiman	N	F
62	mukim	bermukim	Y	B
63	mukim	memukim	N	F
64	mukim	memukamkan	Y	B
65	mukim	memukimi	N	F
66	mukim	permukiman	Y	B
67	mukim	pemukiman	N	F
68	mukim	dimukim	N	F
69	mukim	dimukamkan	Y	B
70	mukim	dimukimi	N	F

71	ungkap	keungkapan	N	F
72	ungkap	berungkap	N	F
73	ungkap	mengungkap	Y	B
74	ungkap	mengungkapkan	Y	B
75	ungkap	mengungkapi	N	F
76	ungkap	perungkapan	N	F
77	ungkap	pengungkapan	Y	B
78	ungkap	diungkap	Y	B
79	ungkap	diungkapkan	Y	B
80	ungkap	diungkapi	N	F
81	Tuntut	ketuntutan	N	F
82	Tuntut	bertuntut	N	F
83	Tuntut	menuntut	Y	C
84	Tuntut	menuntutkan	N	F
85	Tuntut	menuntuti	N	F
86	Tuntut	pertuntutan	N	F
87	Tuntut	penuntutan	Y	C
88	Tuntut	dituntut	Y	C
89	Tuntut	dituntutkan	N	F
90	Tuntut	dituntuti	N	F
91	didik	kedidikan	N	F
92	didik	berdidik	N	F
93	didik	mendidik	Y	C
94	didik	mendidikkan	N	F
95	didik	mendidiki	N	F
96	didik	perdidikan	N	F
97	didik	pendidikan	Y	C
98	didik	dididik	Y	C
99	didik	dididikkan	N	F
100	didik	dididiki	N	F
101	Gagal	kegagalan	Y	C
102	Gagal	bergagal	N	F
103	Gagal	menggagal	N	F
104	Gagal	menggagalkan	Y	C
105	Gagal	menggagali	N	F
106	Gagal	pergagalan	N	F
107	Gagal	penggagalan	Y	C
108	Gagal	digagal	N	F
109	Gagal	digagalkan	Y	C
110	Gagal	digagali	N	F

111	hadir	kehadiran	Y	C
112	hadir	berhadir	N	F
113	hadir	menghadir	N	F
114	hadir	menghadirkan	Y	C
115	hadir	menghadiri	Y	C
116	hadir	perhadiran	N	F
117	hadir	penghadiran	Y	C
118	hadir	dihadir	N	F
119	hadir	dihadirkan	Y	C
120	hadir	dihadiri	Y	C