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CODE-SWITCHING DYNAMICS IN BILINGUAL DIGITAL GAMING INTERACTIONS

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Abstract: This study examines code-switching, or language mixing, in a bilingual individual while playing video games. The aim is to determine which types of code-switching are used and the subject's thought process when engaging in this behaviour. This study employed a qualitative case study design involving one participant (the game streamer). Data were collected by recording the participant's spontaneous, unscripted conversations during gameplay, followed by a semi-structured interview to corroborate and clarify the findings. The research results indicate that the subject employed four methods of code-switching: switching languages between sentences, inserting English words into Indonesian sentences, using short interjections, and combining English words with Indonesian affixes (such as “*nge-burst*” or “*boss-nya*”). From the interview, it was revealed that the subject had been accustomed to using English for 8 years, so that gaming terms came to mind automatically without prolonged thought. In conclusion, code-switching in the gaming world does not indicate that the subject is not fluent in Indonesian, but rather represents a strategy to communicate more quickly and accurately. English is used for matters of game logic and strategy, while Indonesian remains the subject's primary language of choice for expressing feelings honestly. This study demonstrates that hobbies such as playing video games are highly effective in helping an individual to master a foreign language naturally.

Keywords: bilingualism, code-switching, cognitive process

INTRODUCTION

In this era of globalization, the ability to use more than one language (bilingualism) has already become common, especially among young people. They are often exposed to foreign languages from social media, school, and daily interaction. So, using two languages is not only something special but already part of everyday communication in a multilingual society. According to Grosjean (2010), bilingual people use their languages dynamically depending on the situation, so both languages can interact in real-life communication.

Digital gaming has become one of the most influential environments for language exposure among young people. Through online games, people can engage in extensive communication, collaboration, and problem-solving through language. Many games are designed in English and require players to understand instructions, interact with other players, and process information immediately. This makes the gaming environment a significant platform for learning a second language naturally.

Research finds that games can function as a language-learning ecosystem. Through repeated exposure to game mechanics, mission objectives, and social interactions, players can acquire new vocabulary and communication strategies without formal instruction. This phenomenon aligns with Krashen's (1985) theory about the importance of meaningful and comprehensible input in language acquisition. The gaming environment supports the comprehension and retention of contextualized language among players.

Online gaming communities are also characterized by multilingual communication. English is frequently used as a lingua franca among players from different linguistic backgrounds. This allows bilingual gamers to adapt their communication styles and combine local languages with English gaming terminology. This practice develops a rich environment for investigating code-switching behavior because language choices are made spontaneously under communicative pressure among online gaming players.

From a linguistic perspective, using language in bilingual people involves a complex cognitive process. Vygotsky & Cole (1978) said that language development is influenced by social interaction and mental processes. In a bilingual context, two languages are still active in the brain, so people need cognitive control to choose which language to use. This shows that bilingualism is not only about language ability, but also about cognitive function.

One real example of bilingual language use is code-switching. It means moving from one language to another in conversation. This is not a language mistake, but a systematic process. Poplack (1980) divides code-switching into inter-sentential, intra-sentential, and tag-switching. Also, Myers-Scotton (1993) explains that in mixed languages, a dominant language serves as the structural (matrix) language.

In second language acquisition (SLA), using two languages in a real context is also important. Krashen (1985) explains, through the input hypothesis, that learning occurs when people receive understandable input. Swain (1985) also explains the output hypothesis, which states that producing language is also important. So code-switching can occur due to the interaction between input and output in daily communication.

Research also shows that bilingual people have cognitive benefits. Wardhaugh and Fuller (2021) stated that bilingual people can manage different languages depending on the social context. It means they have cognitive flexibility. So, code-switching is not only a communication strategy but also a marker of cognitive ability.

But much research about code-switching still focuses on the classroom or formal learning situation. For example, Bayyinah et al., (2024), Santosa et al., (2023), Espanola et al. (2025), Munawaroh et al., (2022), and Ulfah & Perangin-angin (2026) found that code-switching helps teachers explain material, increase participation, and help students understand the lesson. But those studies are only in formal setting.

In daily life, language use is more natural, spontaneous, and not controlled. Some research, such as Aganmar et al. (2022), shows that code-switching is used to explain

meaning and solve vocabulary problems. Sudarsono (2021) said it also shows identity. Wang (2024) also explains that code-switching help manage interaction.

The massive integration of digital technologies into society's life supports the transformation of the nature of bilingual communication. Bilingual speakers switch languages both in physical interactions and digital spaces. Some platforms become environments for language mixing, such as social media, online communities, and gaming platforms. These interactions involving language switching occur naturally. These platforms provide valuable opportunities to examine how bilingual speakers manage multiple linguistic systems simultaneously.

A sociolinguistic perspective emphasizes that language choice in digital spaces is influenced by community norms, group identity, and communicative efficiency. In the online gaming environment, English terminology often becomes general knowledge and is used by most players, even though some of them are not native English speakers. Code-switching is not only about linguistic functions but also about social and identity-related purposes.

Although code-switching has been widely studied, most studies in the last five years have focused on classroom settings. For example, Zainil and Arsyad (2021) found that teachers used code-switching to help students understand the lesson and to support classroom interaction. Likewise, Munawaroh et al., (2022) showed that both teachers and students used code-switching to explain meanings more clearly, keep communication flowing, and support the learning process. Similarly, Hazaymeh (2022) reported that EFL teachers considered code-switching an effective teaching strategy for explaining difficult materials and encouraging students to participate in class. These studies have made important contributions to understanding the functions of code-switching in educational settings. However, research on code-switching in natural contexts is still limited. Most previous studies were conducted in formal classroom situations where language use is influenced by teaching goals. As a result, little is known about how people use code-switching naturally in everyday communication. Therefore, this study aims to fill this gap by investigating code-switching in spontaneous conversations during online gameplay, providing a better understanding of how bilingual speakers use code-switching in real-life communication.

Based on that, this research focuses on identifying types of code-switching (inter-sentential, intra-sentential, tag-switching) and analysing the functions and triggers in spontaneous speech while playing a game. This research also seeks to connect it with the cognitive processes of a bilingual speaker. The novelty of this research lies in its focus on natural context (gameplay) and its combination of sociolinguistic and psycholinguistic perspectives.

LITERATURE REVIEW

Bilingualism, cognitive processes, and code-switching become important parts of this study because they relate to how people use language in real life. In bilingual people, two languages are used together and are influenced by situation and communication needs. Also, code-switching often appears in daily interactions, not only in the classroom but also in natural contexts. Some theories and previous studies help to understand how this phenomenon happen and what factors influence it.

Bilingualism and Cognitive Process

Bilingualism is the ability to use two languages in daily life. Grosjean (2010) states that bilingual people do not use their languages separately, but blend them depending on the situation. They choose which language to use based on context and need. Vygotsky & Cole (1978) explains that language development is influenced by social interaction. In bilingual individuals, both languages are active in the brain, and they must control which language to use. This shows that bilingual people possess cognitive flexibility when switching languages.

Actually, the way brain work for bilingual people is very busy all the time. Bialystok (2021) say that bilinguals have something called "Executive Function" that is very strong. This is because when they speak one language, the other language is actually still "awake" in the back of the head. So the brain must work extra hard to "push down" the language that is not used. Because of this everyday practice, bilingual people usually become more smart at focusing on things and they can ignore distractions better than people who only know one language.

Beside that, bilingualism also make the person have a very good "Cognitive Flexibility." This mean they can change their way of thinking very fast depending on who they talk to. Baker (2011) explain that being bilingual is not just about words, but it change how the brain solve problems. For example, if a bilingual person cannot find a word in English, their brain quickly move to find another word in Indonesian or other language. This mental jumping make the brain more healthy and active, like a person who always go to gym but for their mind.

Then, we also must look at how they understand things or "Comprehension." Krashen (1985) say that "Comprehensible Input" is the key to understand language. For bilingual people, they have more "tools" in their head to understand a message. If the English sentence is too hard, they use their knowledge from the other language to guess the meaning. This show that code-switching is actually a very smart strategy to make sure they don't get confused. They don't care about perfect grammar, the most important is the meaning is clear and everyone understand.

Lastly, this cognitive process also help in social life. When bilinguals switch their language, they are actually adjusting their brain to the person they talk to. Hoffmann (2014) mention that this is part of social skill too. The brain is not just processing grammar, but also processing "who am I talking to?" and "is this the right time to switch?". So, the cognitive process and the social interaction is always working together. This is why bilingual people usually more open-minded because their brain is used to seeing the world from two or more different sides every single day.

Types and Function of Code-Switching

Code-switching occurs when people change languages during a conversation. Poplack (1980) identifies three types: inter-sentential code-switching (between sentences), intra-sentential code-switching (within a sentence), and tag-switching (using a short phrase or tag). Myers-Scotton (1993) introduces the matrix language frame, in which one language serves as the main structure while the other supports it. This explains how bilingual people mix their languages. Code-switching serves various functions, such as explaining meaning, expressing identity, aiding communication, and overcoming language limitations. In second language acquisition (SLA), code-switching also supports the learning process. Krashen (1985) emphasizes the importance of input, while Swain (1985) highlights the importance of output. Previous research has mostly

been in the classroom, but some research shows that code-switching also happens in daily life. Aganmar et al. (2022), Sudarsono (2021), and Wang (2024) show that code-switching is natural and influenced by social and cognitive factor. So, code-switching is not only a linguistic phenomenon but is also connected with cognitive processes in bilingual people, especially in real communication.

If we talk more about the reason why people do this, Hoffmann (2014) say that code-switching have many social and emotional reasons. For example, people switch their language because they want to talk about a specific topic that is easier to explain in English, or maybe they want to show their feelings like being angry or very happy. Sometimes, bilingual people use code-switching to "exclude" or "include" someone in the group. If they want to be private, they switch to a language that other people don't understand. This show that code-switching is not just a mistake because we forget words, but it is a very smart social strategy to manage our relationship with other people in daily life.

Furthermore, Appel & Muysken (2025) explain that code-switching also have a "poetic function" and "metalinguistic function." This mean people mix languages because they want to tell a joke, make a funny story, or to impress other people with their skills. In the brain process, this is very complex because the speaker must choose the right word from the right language very fast. Gumperz (1982) also mention that code-switching act like a "we-code" and "they-code," where switching to a native language can make the conversation feel more like family and close. So, every time a person switch their language, they are actually making a bridge to connect their identity, their brain power, and their social world at the same time.

Code-Switching in Digital Communication

Digital communication has expanded the context in which code-switching occurs. Several previous studies have found that bilingual speakers frequently use alternative languages in informal interactions, on social networking platforms, and in community games. Digital communication demands rapid responses, forcing speakers to code-switch quickly, in contrast to classrooms, which tend to be passive.

Sitaram et al., (2019) found that code-switching in digital platforms is heavily influenced by technological developments, social norms, and the primary language. In multilingual communities, speakers often combine multiple languages to achieve efficient communication within a group. In online games, code-switching occurs because many game mechanics, interface commands, and strategic terms are typically available in English. This leads players to unconsciously use English terminology in their communication.

Code-Switching and Identity Construction

Code-switching is strongly associated with the construction of identity. Norton (2013) argues that language choices reveal how individuals position themselves within particular social groups. Bilingual speakers often engage in code-switching to demonstrate competence, foster a sense of solidarity, or identify with specific communities.

Within gaming environments, the use of English terminology can represent affiliation with the global gaming community. Consequently, code-switching should be viewed not only as a linguistic practice but also as an expression of social identity and cultural engagement.

Digital Gaming as an Informal Language Learning Environment

Digital gaming has emerged as an important informal setting for second language acquisition. In contrast to conventional classroom environments, online games offer authentic contexts where language is used for practical and meaningful purposes. Players are required to understand instructions, cooperate with teammates, negotiate meanings, and make rapid decisions in dynamic situations. These activities provide opportunities for both receiving and producing language, which are crucial elements in the language learning process.

According to Gee (2003), video games foster effective learning experiences by promoting active engagement, critical thinking, and language use within meaningful contexts. Instead of relying solely on rote memorization, players acquire linguistic knowledge through participation in goal-oriented tasks. This approach often enhances motivation because language functions as a necessary resource for accomplishing in-game objectives.

Likewise, Thorne et al. (2009) suggest that online gaming communities serve as environments for language socialization, where individuals develop linguistic competence through interaction with other players. Continuous exposure to gaming-related communication enables participants to become familiar with specific vocabulary, discourse patterns, and communication strategies. Therefore, gaming environments can play a substantial role in supporting language development beyond formal educational contexts.

Within multilingual gaming communities, English commonly functions as a shared language among players who come from diverse linguistic backgrounds. As a result, bilingual gamers often switch between languages to meet different communicative demands. This phenomenon offers a valuable opportunity to examine code-switching behavior and the processes involved in bilingual language use.

METHOD

This research uses a qualitative case study approach to explore code switching in real life. Scientifically, this study falls within the fields of sociolinguistics and psycholinguistics because it examines language use in social interaction, as well as cognitive and bilingual processes. A case study is selected because it allows researchers to understand phenomena comprehensively within a bounded system, namely, a single individual as a research subject. According to Creswell and Poth (2018), a qualitative case study is effective for exploring a phenomenon in depth by considering the context in which it occurs.

This study involves one bilingual subject who actively uses Indonesian and English in daily life. selection of a single subject based on a characteristic case study research that emphasizes more depth in analysis, compared to the number of participants. The subject is considered representative because they can use two languages alternately depending on the communication context. This aligns with Grosjean's (2010) view, which holds that a bilingual speaker's ability to activate two languages alternately depends directly on the communication situation.

Research materials include the validity of data generated from the subject's spontaneous speech, while the tools used include digital sound recording devices and interview guidelines. This research is bound to a specific location because data collection is conducted in a natural setting, with the subject playing a game in a daily environment. Research time is conducted with flexibility, adapting to the subject

activity, with a focus on the moment, while verbal interaction occurs spontaneously. The nature of this research is qualitative descriptive because it aims to describe and interpret language phenomena without manipulating variables.

Technique data collection is conducted through documentation and interviews. primary data obtainable from an audio recording of the subject conversation while playing a game, natural, spontaneous, and unscripted. Using natural data is important in research on code switching because it can authentically reflect the youth of language in daily life. Gardner-Chloros (2009) confirms that code-switching is a valid code emerging from spontaneous interaction without researcher intervention. Besides that, an in-depth interview is conducted as supporting data to delve into the reasons, objectives, and factors that trigger code-switching. Researchers play a role as non-participating observers to maintain the naturalness of the data. all of the recording, then transcribe it into text, and perform basic analysis.

To ensure trustworthiness, the researcher applied data triangulation by combining spontaneous speech recordings and semi-structured interviews. The interview data served to confirm interpretations derived from the recorded interactions. Furthermore, all recordings were transcribed verbatim before analysis to preserve linguistic accuracy. The use of multiple data sources strengthened the credibility and dependability of the findings.

Data analysis is done qualitatively through several steps: data reduction, data presentation, and drawing a conclusion. In the reduction data stage, researchers select and identify parts of speech that contain code-switching. Next, classification of the data by type of code switching according to Poplack (1980): inter-sentential, intra-sentential, and tag-switching. Besides that, the analysis also uses the Matrix Language Frame framework from Myers-Scotton (1993) to identify the dominant language in each speech. At the presentation data stage, the classification result is displayed in the table and a narrative description. Add the last stage, which is drawing a conclusion using the interpret function and trigger-factor code-switching based on the result analysis, along with interview data. Thus, this research is expected to provide a comprehensive idea about the phenomenon of code switching in bilingual communication contexts.

FINDINGS AND DISCUSSION

The transcript and interview data indicate that the subject is an active bilingual, proficient in both Indonesian and English, while engaged in gameplay. Language use follows identifiable patterns and serves specific purposes. Code-switching occurs organically during conversation, reflecting situational and communicative requirements.

Types of Code-Switching in Spontaneous Speech

Typological Patterns of Code-Switching in Digital Gameplay

The findings cover the summarized collected data and the analysis performed on those data relevant to the linguistic structures used by the subject. The data reveals that code-switching is not merely a random insertion of foreign words but a systematic linguistic behavior.

**Table 1. Corpus of code-switching data in spontaneous speech
(Transcript evidence)**

<i>Category Code Transfer</i>	<i>Data Citation (Transcript Evidence)</i>	<i>Linguistic Function Analysis</i>
Inter-sentential (between sentences)	"The gauge is filled at the start of every turn. ... Basically, kita harus one-shot kah ini?"	The subject processes the technical information from the (English) system and then converts it into an action plan in the L1 (Indonesian) structure.
Intra-sentential (in the sentence)	"Kita remove stance dulu"; "Aduh gak ada remove buff ya?"; "Lowering dulu ininya si bossnya."	The insertion of game-specific terms into Indonesian sentence structures to maintain accuracy and speed of communication.
Tag Switching	"Okay, what is this?"; "It's okay, it's okay"; "That's it. That's for the run."	Serves as a spontaneous reaction, a regulator of the rhythm of speech when thinking, or a marker of the end of a game condition.
Intra-word (compound morphology)	"Gage-nya", "Boss-nya", "Ulti-nya", "Nge-burst", "Nge-remove"	Subjects creatively integrate English vocabulary into Indonesian grammar rules (affixation) to sound phonetically natural.

The discussion section interprets these findings through the Matrix Language Frame (MLF) model by Myers-Scotton (1993). The data shows that Indonesian acts as the "Matrix Language" (the grammatical frame), while English serves as the "Embedded Language" providing specific content. The emergence of intra-word switching (e.g., "Nge-remove") is a complex linguistic phenomenon known as morphological integration. This confirms Poplack's (1980) theory that proficient bilinguals maintain the grammatical integrity of both languages even when mixing them.

Furthermore, the prevalence of English terms like "remove buff" suggests a lexical gap in the subject's L1 context, where English is perceived as more precise for the gaming domain.

Discussion of Inter-Sentential Code-Switching

The presence of inter-sentential code-switching indicates the participant's capacity to alternate between two languages while maintaining smooth communication. This pattern reflects a strong level of bilingual proficiency, as the speaker is able to preserve grammatical structures in both languages. In many instances, the switching occurred when game-related content was received in English and then conveyed within an Indonesian conversational context.

These findings are consistent with Poplack's (1980) view that proficient bilinguals typically switch languages at grammatically acceptable boundaries. Therefore, the

participant's code-switching behavior can be understood as a systematic and purposeful linguistic practice rather than an instance of arbitrary language mixing.

Cognitive Implications of Morphological Integration

The use of expressions such as *"nge-remove"* and *"boss-nya"* reflects an advanced degree of linguistic integration. Instead of simply adopting individual English words, the participant incorporated English lexical items into Indonesian morphological patterns. This phenomenon illustrates the interplay between linguistic competence and cognitive adaptability.

From a psycholinguistic standpoint, this type of integration suggests effective lexical access and retrieval mechanisms. The speaker is able to draw upon English vocabulary while concurrently employing Indonesian grammatical structures. As a result, the process demonstrates the flexible and dynamic characteristics of bilingual language production.

Function and Triggers of Code-Switching

Cognitive and Socio-Psychological Triggers

The findings cover the summarized collected data and the analysis performed on those data relevant to the underlying motivations for code-switching. The interview results indicate that the subject's 8-year exposure to English has led to a state of linguistic automaticity.

Tabel 2. Interview analysis results: Reasons and triggers for code-switching

Indicators Findings	Interview Result (Data Subject)	Brief Analysis Of Researchers
Language Exposure (<i>Krashen, 1985; Ellis & Shintani, 2013</i>)	Actively use English for 8 years (from the age of 10).	Long experience creates a very strong and mature Second Language Foundation.
Cognitive Comfort (<i>Vygotsky & Cole, 1978 and Bialystok, 2021</i>)	Gives a score of 9 out of 10 for the comfort of wearing English while focusing.	Indicates that English is already the main <i>"language of thinking"</i> in a technical context.
Spontaneity (Reflex) (<i>Segalowitz, 2010 and Ng & Yang (2022)</i>)	Terms like <i>"Push"</i> or <i>"Looting"</i> come out automatically without translation.	Evidence of a process of Automaticity (automation) in which the brain instantly processes concepts without hindrance.
Psychological/Emotional Factors (<i>Krashen, 1982; Tomić & Kroff (2022)</i>)	Feel Indonesian sounds stiff and English is more flexible for the atmosphere of play.	There is a shift in language identity in which subjects feel more free to express themselves through a second language.

The discussion section states why the problem is important by highlighting the Automaticity Process. According to Grosjean (2010), bilinguals operate in different "modes"; in this study, the subject is in a full "*bilingual mode*" where both languages are simultaneously active. This is further supported by the interview data: Excerpt 1 "I give it a 9 out of 10 for comfort. Using English terms like 'push' or 'looting' feels more natural and faster. If I have to think of the Indonesian translation, it slows me down" (Subject).

Excerpt 1

"Indonesian feels a bit formal or stiff for gaming. English is more flexible and fits the atmosphere better" (Subject).

This emotional preference confirms Dewaele's (2016) theory on the multicompetence of bilinguals, where different languages are assigned to different emotional or functional domains. While English is the language of "*logic and strategy*," the subject reverts to Indonesian for "*emotional grounding*". From a broader perspective, these findings confirm that Second Language Acquisition (SLA) is significantly enhanced by comprehensible input and output in digital environments, as theorized by Krashen (1985) and Swain (1985). The study disconfirms the notion that code-switching is a sign of linguistic deficiency; instead, it is a strategic approach for efficient information processing in the modern digital age. These findings are consistent with Salig et al. (2026), who found that code-switching can enhance memory retention by increasing attention and strengthening memory encoding processes.

Automaticity and Language Processing

The interview results indicate that the participant has developed a considerable degree of automaticity in second-language use. Automaticity refers to the capacity to process and produce language quickly with little conscious attention. Segalowitz (2010) explains that continuous exposure and frequent practice help decrease the cognitive demands involved in language production over time. The participant's observation that gaming-related terms were produced spontaneously without the need for translation provides evidence of this process. Instead of converting meanings from English into Indonesian, the participant appeared to access concepts directly through English lexical forms.

The findings of this study are in line with previous research on bilingual communication. Consistent with Aganmar et al. (2022), the participant employed code-switching as a strategy to enhance communicative efficiency and address lexical gaps. Nevertheless, in contrast to studies conducted in educational settings, the present research shows that code-switching emerges naturally in leisure-oriented activities without formal instructional support.

The results further reinforce Wang's (2024) argument that code-switching serves as an interactional resource. Within the gaming environment, language alternation helped the participant organize information, convey strategic ideas, and sustain the flow of communication. These findings highlight the significance of digital gaming spaces as valuable contexts for bilingual language development.

Implications for Bilingualism and Language Learning

This study provides valuable insights into the nature of bilingualism within modern digital contexts. The participant's language use illustrates that bilingual competence involves more than mastery of grammatical rules. It also encompasses the ability to strategically utilize available linguistic resources in response to specific communicative situations. Rather than alternating languages arbitrarily, the participant's language choices were shaped by communicative intentions, processing efficiency, and familiarity with gaming-related discourse.

The findings are in accordance with Grosjean's (2010) perspective that bilingual individuals should be viewed as integrated language users rather than as two independent monolingual speakers. In this view, both languages coexist within a single linguistic repertoire and are activated according to contextual needs. Throughout gameplay, English primarily served as a medium for accessing technical vocabulary and game-related concepts, whereas Indonesian was predominantly employed for social interaction and the expression of emotions.

The results also indicate that long-term engagement with English-language gaming environments may facilitate language development through incidental learning. Unlike formal educational settings, incidental learning takes place while individuals concentrate on completing meaningful tasks rather than intentionally studying a language. Regular exposure to game interfaces, instructional content, and interactions within online gaming communities allows players to encounter linguistic forms repeatedly in authentic contexts. Such experiences may strengthen vocabulary knowledge and promote greater fluency and automaticity in language use.

In addition, the study highlights the role of motivation in the language-learning process. Because digital games are designed to be engaging and immersive, they often encourage prolonged participation. When language is used within enjoyable activities, learners may feel less anxious and become more willing to communicate. These conditions are widely recognized as supportive of successful language acquisition because they foster meaningful interaction and active involvement.

Taken together, these findings suggest that online gaming environments should be considered more than sources of entertainment. They can also function as alternative spaces that promote second-language learning, bilingual communicative competence, and cognitive adaptability. Future studies may investigate ways of integrating gaming elements into language education to create more engaging learning experiences and provide learners with authentic opportunities for communication.

CONCLUSION

Based on the results of the study, it can be concluded that the subject's habit of mixing languages while playing games is a sign that his brain is working very intelligently and efficiently. The subject's ability to incorporate English words into Indonesian language rules proves that his brain is very flexible in managing two languages at once. This can happen because the subject has been accustomed to using English for 8 years, so the brain no longer needs to translate words one by one manually. In addition, it was found that subjects shared language functions in their minds: English was used for technical and strategic matters to speak faster, while Indonesian remained the "language of the heart" that emerged automatically when the subject felt surprised or disappointed. So, mixing languages in the digital world is not a shortage, but a smart way for the brain to manage the burden of the mind to keep communication smooth.

As a suggestion, for teachers or parents, playing online games can be used as an effective support medium to practice foreign language skills in a natural and fun way. In addition, for future researchers, it is advisable to observe whether different types of games (such as adventure or strategy games) also influence the way in which a person mixes his language. Finally, the phenomenon of code switching should no longer be viewed as a language disability, but rather as a form of modern communication skills that need to be supported in a digital educational environment.

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