The Impact of Social Media on the Use of Code Mixing by Generation Z

Nafan Tarihoran[1](✉), Eva Fachriyah[2], Tressyalina[3], Iin Ratna Sumirat[1]
[1]State Islamic University Sultan Maulana Hasanuddin Banten, Indonesia
[2]Serang Raya University, Banten, Indonesia
[3]Universitas Negeri Padang, Indonesia
nafan.tarihoran@uinbanten.ac.id

Abstract—Generally, generation Z mixes English and Indonesia when communicating with each other. This sociolinguistic phenomenon called code-mixing impacts social media as part of the development of Information Communication Technology (ICT). Therefore, this study investigated the impact of social media on code-mixing by generation Z. This study was carried out at Serang Raya University, Indonesia, where English is the only foreign language used to teach students. Three hundred thirty-six students participated in this study (N=110, F=226). The qualitative data were collected through self-completed questionnaires and interviews. The research aims to highlight the contribution of social media in code-mixing and determine why this generation uses English and Indonesian in social media. The present study revealed that nine utterances with a high frequency were used. The causing factors and reasons behind this phenomenon were varied. In addition, the findings showed that individual factors were for the very high percentages (75%). Among them were social factors (15%) and cultural factors (10%). The results showed that the use of social media had an impact on code-mixing between Indonesian and English for Generation Z.

Keywords—code-mixing, generation Z, social media, sociolinguistic phenomenon

1 Introduction

There is a rapid growth in technology which has a significant impact on people all over the world, especially those born from 1995 to 2014, commonly known as Gen Z. This group of people are characterized as those born in the digital era, and they are unable to live without digital technology [1]. Generation Z (Gen Z) enjoys using social media to communicate and various activities because they are the first truly digital generation to grow up with technology and smartphones. According to a survey by Business Insider, this generation generally uses three platforms, and the most is Facebook. Furthermore, they are extensively influenced by technology because they have access to mobile devices, digital equipment, and the internet [2]. They prefer social media to communicate with each other rather than conventional means of communication, such

as short message service (SMS) with a change in the learning paradigm [3]. Although various social media platforms, Gen Z prefers Instagram, Snapchat, Facebook, and Twitter [4].

Currently, there is a yearly increase in the use of social media, which has significantly affected language [5]. Children and students of all ages are caught up in a massive, unexpected experiment, surrounded by digital devices that were not available even five years ago [6], and mobile learning is an educational reform [7].

Based on the study [8], social media has added a new dimension to language evolution, increasing the mixing of language and cultures, thereby leading to the fading of society. Schools administrators develop many social media platforms in the English language [9]–[11]. Furthermore, social media users always mix code when tagging on YouTube, Facebook, Instagram, and tweeter [12]. There are many familiar terms in social media, such as share, follow, unfollow, follower, like, unlike, wall, posting, online, offline, highlight, bio, activity feed, caption, mention, comment, follow back, endorse, give away, tag, hashtag, late post, repost, swipe up, tweet, retweet, trending topic, etc.

Code-mixing is a sociolinguistic phenomenon aimed to understand the relationship between language and culture better to better understand the structure [13]. The goal of sociology is to understand the social structure better through the study of language. The advancement in Information and Communication Technology (ICT) affects communication due to many code languages. Therefore, the doer becomes bilingual or multilingual, the most popular sociolinguistic phenomenon involving intermingling codes from various languages to facilitate communication and convey a message as the English language becomes more integrated into people's lives, its use in formal and informal settings increases. People have started using English code, such as hex or hexadecimal, to express themselves, thereby leading to a rise in the popularity of foreign languages. Aside from the mother tongue, English is one of the most commonly used foreign languages; hence it is a lingua franca due to the influence of globalization. In addition to their mother tongue, many Indonesian teenagers now use English to communicate. It has been observed that in today's social-communicative environment, these young people tend to code-mix English and their native tongues. This phenomenon is seen in their use of language on social media or real life, a standard mode of communication among Gen Z. Nowadays, people use social media to share their feelings, gather knowledge, and make new friends.

Data collected through observation showed that many public figures and teenagers use English language codes when interacting on Instagram and WhatsApp [14]. Many of these words were obtained from online media with motivations when someone mixes code with another language. There are many reasons youngers participate in mixing code while communicating [15]. These reasons show that English is a global language, effective communication, a better social position, or prestige. This research emphasizes the use of Indonesia in English classrooms.

Several preliminary studies on code-mixing investigated its function and reason based on users' conversations on several social media. stated that Facebook users mix code when communicating on the platforms for various reasons such as to express politeness and respect, convey clear meaning and feelings, and present their identities or group membership [16]. Facebook users use the mixed code for several reasons,

such as to make communication easier, to correct language, and to help understand the context [17].

Unlike previous research, this study focuses on some words used to carry out instruction in social media, such as like, friend, follow, follower, etc. This research aims to reveal various aspects of sociolinguistics phenomenon such as followers using social media, their preferred friendships, and their preferences. Accordingly, the current study investigates this phenomenon by identifying the most frequent types and factors that motive code-mixing. The study's findings will inform the research to understand how social media impacts code-mixing students' learning in Indonesia. Hence, the differences among the participants' responses that can be attributed to age, gender, flatform, and hours spent online are also investigated.

Gen Z always uses these instructions in their daily conversation. Due to the daily use of social media, some terms impact language, and social media contributes to code-mixing by Gen Z.

2 Literature review

2.1 Code-mixing

Code mixing has been discussed by a significant number of authors in literature. For example, research has provided evidence for language studies, society, and phenomena. This tendency can also be observed in a university or other academic setting [18], [19]. The study between language and society is sociolinguistic, and code-mixing is one of its phenomena. Sociolinguistics is the study of language in use [21]. In more detail, sociolinguistics is the study of the interactions between language and culture to understand the structure of language and how it works during communication [20].

Furthermore, it is concerned with the relationship between language and culture. The main focus is on linguistic diversity through social classes and the variety of communicative contexts in which women and men use their verbal repertoires. When people communicate, they use language as a tool to send messages, thereby making it a sociolinguistic phenomenon. There are many types of sociolinguistic phenomena, such as code-mixing.

Several scholars have studied code-mixing. Code-mixing is defined as "any situation in which lexical item and the statement has elements of grammar from two different languages" [22]. It denoted that the speakers or writers freely combines one or two spoken interaction. Code-mixing occurs when a speaker uses two languages in a single utterance simultaneously [23]. Code-mixing, also known as "Intra sentential code," refers to "all cases in which lexical objects and in one sentence, grammatical elements from two languages are mixed" [24]. They stated that the process of mixing two or more languages in word form in a sentence is a part of the utterance.

Furthermore, Code-mixing is divided into three types: insertion, alternation, and congruent lexicalization [22]. He said different ways constrain these three types in specific bilingual settings. This study highlighted code-mixing as the process of mixing two or more words, phenomenon, expression, reduplication, and idiom from [22].

The form of code-mixing occurs in social media, used by many people [25]. These forms of code-mixing are used to demonstrate products on social media through text, which has opened up a slew of new possibilities for information access and language technology. The mixing code phenomenon has many functions for each language user, including social media. There are many reasons for someone to mix code: bridge gaps, make effective communication, explain points, affirm social status, and emphasize something [26]. The reasons why people mix language in social interaction have been found [27].

Furthermore, the factors are speaker or writer, intercalators, the setting of the conversation, the purpose, and the topic of the conversation. In this study, the writers apply code-mixing introduced [28]. He stated three factors of using code-mixing, social, cultural, and individual factors.

In summary, the writers will investigate the type of code-mixing used by students at university through their Facebook group, the most absorption words used by students on Facebook, and factors influencing code-mixing.

2.2   Generation Z

A generation is defined as a group of people with varying characters and born within a specific period [29], [30]. Generation Z is the individuals born after the millennial [31]. Several scholars have described, generation Z refers to people born in the 1990s and raised in the 2000s through the most significant developments in the century. This category of people now lives in a world with the internet, cellphones, laptops, available networks, and digital media [32]. In this generation, students are more likely to use code-mixing on social media, such as Facebook, because of technological advancements. Generation Z is born in 2001 or later and the first generation to be "born digital." [33]

One of the most significant characteristics of this generation is that they were born "natives" in the modern digital world [34]. This generation has many names such as Digital Natives [35], post-millennials [36], Net Generation [37], The Centennials [38], etc. This era transformed the world towards digitalization, thereby creating challenges to the traditional ways of carrying out activities and increasing the use of technology [39].

Based on the concept above, generation Z is familiar with ICT. According to [40], they are comfortable with technologies that are relatively recent for older generations, with familiarity with the ubiquitous of mobile communications. In this generation, students. As a result, this generation is also affected and interconnected to the web. Globally known music, movies, and celebrities are connected to this generation, rather than numerous trends, fashion, food places, and several events are interconnected to social media through technology and globalization [41]. In brief, this generation usually communicates using the mixed code comprising of English and Indonesian. The participants in this study are natives of Indonesia and use both languages offline and online.

2.3   Social media

Social media enables people to connect, communicate, discuss, and interact [42]. The channels broadcast news and information to viewers of all genders. Another opinion, according to [43] people use social media to connect with others who have similar

interests, activities, backgrounds, or real-world connections. Research shows that half of all people get news from social media daily, which directly impacts today's world events [44], [45].

In addition, social media comes in various shapes and sizes, dependent on usage. Some of the most common ones are social networking sites (Facebook, LinkedIn), blogs (WordPress, Medium), microblogs (Tumblr, Twitter), media-sharing sites (Vimeo, You-Tube, Instagram, review and recommendation sites (TripAdvisor, Yelp, and others), numerous discussion forums [46], [47], Slack, Trello, and other collaboration sites.

All social media networks can be divided into four distinct regions [48]. They are as follows: (1) a social group, (2) Publication on social media, (3) Amusement for the whole family, and (4) Social business. Each zone is characterized by functions that explain and unite the social media platforms.

Social community. All social media channels in this zone allow individuals to connect and communicate with various communities. Therefore, the primary goal is to facilitate interaction and collaboration. Social networks, message boards, forums, and wikis are part of the social culture [48].

Social publishing. The development, publication, and distribution of material, are the core characteristics of the social publishing region. The social media sites available in this region make it possible for anyone to create content regardless of their professional context [49]. The democratization of content creation was made possible by social publishing consisting of individual users, independent 44 practitioners, professional contributors, and brands [48]. The social publishing zone includes blogs, microblogs, media-sharing sites, bookmarking services, and news sites [50].

Social entertainment. Social entertainment zone refers to social media that provide entertainment, enjoyment, and fun-related content. Social media platforms enable users to play games, listen to music, and watch videos [51]. However, it is also important to note that the social networking sites that fall under this category include individuals interacting by sharing different content and posting personal updates. YouTube, Spotify, Reddit, and various online interactive games such as Trivia Crave and Candy Crush are good examples of social entertainment channels [48].

Social commerce. The social commerce zone encompasses all digital services that affect purchasing decisions, and it applies to all social media channels that consumers use in the decision-making process.

Several studies on social media are associated with Gen Z, with the result dependent on the associated area. One of such studies acts as a reference to analyze the specific social media platforms that are popular among them. According to statistics, Facebook, YouTube, WhatsApp, and Instagram are among the most popular social networks worldwide as of October 2021, ranked by the number of active users [52].

In conclusion, social media is a critical and convenient communication network nowadays. It can be used to meet new people, keep in touch with old friends from all over the world, and quickly share ideas and improve things. By sharing their content, users can learn new things and reduce their reliance on advertisements.

Numerous activities are carried out on social media with instructions based on the developers' rules. Several popular terms or instructions are used on social media in Indonesia, among Gen Z. These instructions are initially from the English language and

are obeyed while using the social media platform. Table 1 shows a popular list of terms used in social media.

Table 1. Popular list of term (vocabularies) in social media

Download	Like	Caption
Upload	Share	Private
Wall	Subscribe	Posting/post
Follow	Comment	Streaming
Follower	Mention	Friend
Unfollow	Tag	Unfriend
Followback (Follback)	Hashtag	password

To sum up, social media is a web-based communication tool that allows people to interact and share and seek information via web-based communication channels.

3 Methods

3.1 Respondents

This study is descriptive research patterned in the relational survey and interviewing model [53], [54]. The writers collect the data in the field of data site where the participants experience the issue or the problem under the study. The qualitative method is a procedure that yields results such as words of those who were observed and data from the research such as descriptive data.

The opportunity sampling method was used to obtain data from undergraduates of the Serang Raya University born from 1999 to 2001. The participants were accessible and met the requirements when the research was conducted.

3.2 Instruments

Three instruments were used to achieve the research goal. Namely, a questionnaire was created using Google forms, in-depth interviews, and code-mixing utterances popularly used by generation Z. However, before data collection, a set of questionnaires and interview protocols were prepared. The questionnaire was divided into 2; the first section contains vital information such as name, age, and gender. Conversely, the second section comprises of questions related to social media usages such as (1) which online platforms were used, (2) the number of times they were used per week, (3) which is the popular platform for Gen Z, (4) the use of some standard terms or instructions in their daily conversation (5) the impact of social media usage on code-mixing.

Irrespective of the data extensively collected from the questionnaire, this research mainly focuses on social media contribution on code-mixing usually uttered by Gen Z. Furthermore, it was developed using an interview protocol adapted from [55]. The goal was to confirm the items on the questionnaire, which was similar to the contents of the interview protocols. In the first stage, 10 participants filled the questionnaire. The result

was used as a preliminary study to ensure this phenomenon is re-investigated. In addition, the number of participants was increased to obtain valid and reliable results.

3.3 Procedures

The first stage identified some utterances mixed with English words; specific terms or instructions were also used on social media. Furthermore, an already prepared questionnaire was shared with the participants. This is because there were some instructions and linguistic terms that they were unable to understand, particularly the instructions or terms used on some social media platforms. The individual was given a prepared list of technical terms and instructed to fill out the questionnaire until they fully comprehended the word.

After its completion, all the participants were interviewed personally, and the duration depended on their responses to the questions. The process was recorded and digitally controlled by using the prepared interview protocol. As earlier mentioned, those personally interviewed were selected as the sample for further analysis.

3.4 Data analysis

This is descriptive qualitative research because it explains the linguistic form of code-mixing and its usage. Qualitative data was generally collected from Gen Z's daily utterances, while an in-depth interview was also conducted. The data obtained was represented quantitatively in percent using Google form summarization, analyzed to obtain descriptive statistics. Furthermore, the data realized from the in-depth interview was qualitatively scrutinized for confirmation. The research objects are some familiar English codes specifically used on social online. This study investigates the influence of online media regarding English code-mixing on generation Z. It focused on the undergraduate program. The data source includes questionnaires and interviews briefly carried out to acquire information concerning code-mixing, etc.

4 Results and discussion

4.1 Demographics of students respondents

As in Table 2 shown, the total number of respondents in this study was 336 (M=110 and F=226). All the respondents that responded to the survey were randomly selected from a university located in Serang, the capital city of Banten province. Among them, 67.3% of participants were female, and 110 (32.7%) were males, aged between 18 until 23 years. Active respondents were average age 18–23 years (49%). Participants came from different parts of the country, including the city where their university is located, after completing their Higher Secondary level of education under Indonesia's national curriculum.

Survey data indicated that the number of respondents having access to the social media platforms and Facebook for the very high percentages (43.15%). Among them were YouTube (31.25%), What's App (17.85%), and Instagram (7.75%). Moreover,

respondents could spend less than 5 hours online using social media (49.40%), at 6–10 hours (34.23%), and above 10 hours (16.37%).

Table 2. Demographic characteristics of respondents

Demographic	Characteristics	Frequencies	All Participants (N=336)
Gender	Male	110	32.7%
	Female	226	67.3%
Age	18–19	165	49.10%
	20–21	91	27.10%
	22–23	80	23.80%
Platforms	Facebook	145	43.15%
	Instagram	26	7.75%
	What's App	60	17.85%
	You Tube	105	31.25%
Hours spent online	Less than 5 hours	166	49.40%
	6–10 hours	115	34.23%
	Above 10 hours	55	16.37%

4.2 The type of code-mixing and most popular utterances

Among several kinds of utterances on social media, here is the list of the nine most popular. Table 3 proved that "share" was the highest (10.42%) used in code-mixing since it has become the common word. The participant used "download" (10.12%) and Subscribe (8.93%) on YouTube. "Hashtag" and "Caption" were most popular used on Instagram (8.93%).

Table 3. Most popular utterances on social media

Utterances	Frequency	Percentage (%) All Participants (N=336)	Platforms
Download	34	10.12%	YouTube
Follow	32	9.52%	Instagram
Follower	28	8.33	Instagram
Follow back (*Follback*)	20	5.95	Instagram
Share	35	10.42	What's app
Subscribe	30	8.93	You Tube
Hashtag	30	8.93	Instagram
Caption	30	8.93	Instagram
Unfriend	28	8.33	Facebook

When the survey using Google form was completed, The interviewees were chosen from among the participants because of their availability and willingness to participate,

and the researchers interviewed 10 of them. The most prominent themes that emerged from the interview were (1) the participants' language use; and (2) their attitude and effect towards mixed language. Results from participants' interviews have been presented in Table 4.

Table 4. Types of code-mixing

Participants	Sentences	Type of Code-Mixing
P1	[1] "*Jangan lupa* subscribe and like *ya video nya.*" {Don't forget to subscribe and like to yeah}	Alternation
P2	[2] "*eh,, berapa* follower *kamu*" *dan* "*waaww… follower nya udah banyak banget ya…*" {"eh.. how many your follower" and "wow.. your follower so many.."}	Alternation
P3	[3] "*hai,,, jangan lupa di* follow *ya instagramnya.*" *Atau* "follow *Instagram aku ya…*" {"hey.. don't forget to follow its Instagram," or "follow my Instagram please.."}	Alternation
P4	[4] "*iihh,,, males deh, masa gw udah* follow, *dia nya gak* follback." {"*iihh..* it make me mad, I followed her, but she didn't *follback* me"}	Alternation
P5	[5] "*loh kenapa di* unfriend?" {"*loh* why unfriend"}	Insertion
P6	[6] "*nanti* share *ya di facebook jangan lupa tag gw*" {"please share it in Facebook and don't forget to tag me"}	Alternation
P7	[7] "*bagus tuh infonya dishare dong ke* WhatsApp." {"it's nice info, share it please to WhatsApp"}	Insertion
P8	[8] "ko *caption* nya ga nyambung ya sama fotonya…" {"why the caption is different with the pic.."}	Congruent lexicalization
P9	[9] "*banyak banget sih* hashtag *nya*" {"there are so many hashtags"}	Insertion
P10	[10] "*di facebook banyak foto dia, kamu bisa* download *mana yang lo mau*" {"there are many of her pictures on Facebook, you can download it, which one you like"}	Alternation

As in Table 4 shown above, several mixed code utterances comprise the Indonesian language and English. These are generally uttered by generation Z regularly; some are reported as follow:

[1] "*Jangan lupa* subscribe and like *ya video nya*."
{Don't forget to subscribe and like to yeah}

Subscribe and like their popular posts on YouTube. These are one of the features of this platform. It is a known fact that they are usually used to increase the number of subscribers. Furthermore, they tend to click on the subscribe icon button under any YouTube video or on any channel to view their content. Consequently, users get notified when a channel they subscribe to publishes new content. Gen Z is familiar with those

words because it is used daily. This impacts their language, particularly when they talk about YouTube content. The word 'subscribe' has similar meanings to '*berlangganan*'. Most utterances always involve 'subscribe' rather than '*berlangganan*'. This is based on the fact that they felt nice whenever their messages were delivered. Based on the questionnaire, this response was mostly gotten from social media. Also, the word 'like' has a similar explanation.

[2] "*eh,, berapa* follower *kamu*" *dan* "*waaww… *follower *nya udah banyak banget ya…*"
{"eh.. how many your follower" and "wow.. your follower so many.."}

[3] "*hai,,, jangan lupa di* follow *ya instagramnya.*" *Atau* "*follow Instagram aku ya…*"
{"hey.. don't forget to follow its Instagram," or "follow my Instagram please.."}

[4] "*iihh,,, males deh, masa gw udah* follow, *dia nya gak follback.*"
{"*iihh*.. it make me mad, I followed her, but she didn't *follback* me"}

The words 'follow, follower, unfollow' are from the features on the Instagram application. Sequentially, these are similar to these Indonesian words 'mengikuti, pengikut, tidak mengikuti'. A follower on Instagram is the user that follows a page, and the follower views the post on both the handlers' profile and feed. Meanwhile, those following are the users on Instagram; their profiles and posts are accessible [56]. This is only possible when the account is not set on private. Initially, these words are some sort of instructions. However, Gen Z uses these terms particularly when they want someone to follow them on Instagram. They prefer to use English rather than Indonesia when they have a conversation regarding this topic. Based on the interview result, it was reported that whenever they use the Indonesian language, the meaning tends to be biased and does not fit appropriately in the context. However, it was further stated that the use of English during conversation makes it easier for them to express themselves and opinions without worrying about grammatical restrictions and meaning [57]–[59].

[5] "*loh kenapa di* unfriend*?*"
{"*loh* why unfriend"}

Many words serve as instructions on the Facebook platform, such as unfriend, friend, wall, share, etc. Users are familiar with these words because they are used daily, which causes Gen Z to automatically use these terms during their conversations. For example, according to data [5], the speaker uses 'unfriend' to express that they have decided not to be friends anymore with some uses on their Facebook account. Although it was combined with English, this word was uttered in the speaker's native language because they are affected by social media.

[6] "*nanti share ya di facebook jangan lupa tag gw*"
{"please share it in Facebook and don't forget to tag me"}

[7] "*bagus tuh infonya dishare dong ke* Whattshapp."
{"it's nice info, share it please to WhatsApp"}

Also, for these words on data [6], when the word 'share' is clicked on, it simply implies that they intend to spread some relevant information with their friends. 'Tag' is used when they intend to attach their postings to their friend's wall and for it to be seen. Automatically, it was used in their daily conversation. Although their native language was not English, they combined both to make it easier to understand.

[8] "*ko* caption *nya ga nyambung ya sama fotonya…*"
{"why the caption is different with the pic.."}

[9] "*banyak banget sih hashtag nya*"
{"there are so many hashtags"}

Hashtag and captions are mainly used on social media. These are familiar on Facebook, Instagram, and tweeter. The hashtag is a label for sharing content [60], and a relevant topic is shared by adding a hashtag. Conversely, photos are described by the caption, which emphasizes the happenings of the post. These words are familiar to gen Z and are frequently used in their conversations.

[10] "*di* facebook *banyak foto dia, kamu bisa* download *mana yang lo mau*"
{"there are many of her pictures on Facebook, you can download which one you like"}

'Download' and 'upload' are also familiar terms. Even though it is preferably used in the English version than their native language, Indonesia, it is used in all situations, both written and orally. These instructions are used when some pictures, documents are either extracted or uploaded on online applications. Based on the questionnaire and interview result, almost 100% of Gen Z use these words in their conversation orally and written.

4.3   The code-mixing factors on social media

Table 5. The factors of code-mixing

No.	Factors	Frequencies (N=336)	Percentage
1	Social	50	15%
2	Cultural	36	10%
3	Individual	250	75%

Based on Table 5 above, there are three factors of code-mixing on social media refer to [28] The generation Z does the code-mixing in their utterance 15 percent because of social factor, there are five aspects in the social factor that influences the use of languages such as situation, topic, participant, place, and setting. The highest aspect in this research is the participant. That participant is a member of society; the participant did it due to habit when using social media.

Next, 10 percent were influenced by the cultural factor; participants did the code-mixing to show their millennial generation. The last, 75 percent due to individual

factor, the individual factor has the highest percentage in this research, individual factor was done by two aspects due to lack or limited vocabulary and showing up the skill to others. Most of them did the code-mixing because they did not find the appropriate word to convey their expression; even though they did not know the meaning textually in their first language (L1), they understood what it meant whole.

5   Conclusion

Indonesia is a bilingual country where English is a foreign language; generation Z may mix English and Indonesian in certain situations. Some reasons led to mixing English with the Indonesian language. This study included the code-mixing phenomenon among undergraduate program students enrolling for the BA degree. The finding of this study proved social media has a significant impact on the use of code-mixing by generation Z. This is because many oral and written languages seen on the screens of computers, tablets, smartphones, and other gadgets tend to impact the Indonesian language.

The findings showed that they were interested in responding to those who used code-mixing, conforming to the raised topic, increasing the understanding of the people they were talking to, or talking about western societies and culture. The frequent factors that motivated students code-mixing to make up for lack of words, showing their knowledge of technology and culture have changed, showing that they were educated and could speak English, showing that they had a linguistic background, or showing that they were happy and excited.

Additionally, code-mixing occurs when students combine one structural sentence with another language pattern. The incorporation of two different language systems within a sentence or the process of equally blending two distinct grammatical sentences. In summary, the process of alternation code-mixing does not have a dominant language [22].

Information technology has taken complete control of the world. Technology plays an essential role in developing social media for generation Z, which contributes to the evolution of language and code-mixing in their daily conversation. This might be attributed to how aged persons feel more confident while code-mixing both languages without embarrassment. In recent years, there has been a growth in the number of apps and social media that provide students with numerous programming lessons and challenges to study code-mixing [61]. It can be concluded that code-mixing through social media arouses the student's motivation to practice their English.

6   Limitation of the study

On limitations, firstly, this study was qualitative with survey design and interview. Although impact associations were detected, this study was limited in explaining friendships with students. Furthermore, due to the qualitative approach, extraneous factors such as individual differences (students' personality, cultural values) and social community might also impact the code-mixing [62].

In addition, mixed-method studies are needed to separate various factors. Therefore, future studies should collect more significant expansion that influences students' code-mixing and determine the causal factors influencing students' intention to use social media.

7   Acknowledgment

8   References

[1] A. Ivanova and A. Smrikarov, "The new generations of students and the future of e-learning in higher education," *Int. Conf. e-Learning Knowl. Soc.*, vol. 9, pp. 17–25, 2009.

[2] S. Papadakis, F. Alexandraki, and N. Zaranis, "Mobile device use among preschool-aged children in Greece," *Educ. Inf. Technol.*, no. 0123456789, 2021. https://doi.org/10.1007/s10639-021-10718-6

[3] K. E. Murray and R. Waller, "Social networking goes abroad," *Int. Educ.*, vol. 16, no. 3, p. 56, 2007.

[4] M. Jambulingam, J. Francis, and M. Dorasamy, "What is generation Zs' preferred social media network?," *2018 Fourth Int. Conf. Adv. Comput. Commun. Autom.*, pp. 1–4, 2019. https://doi.org/10.1109/ICACCAF.2018.8776817

[5] S. Kemp, "Digital 2019: Global digital overview," *Digital Global Overview Report*, 2019.

[6] K. Hirsh-Pasek, J. M. Zosh, R. M. Golinkoff, J. H. Gray, M. B. Robb, and J. Kaufman, "Putting education in 'educational' apps," *Psychol. Sci. Public Interes.*, vol. 16, no. 1, pp. 3–34, 2015. https://doi.org/10.1177/1529100615569721

[7] S. Papadakis, "Advances in Mobile Learning Educational Research (A.M.L.E.R.): Mobile learning as an educational reform," *Adv. Mob. Learn. Educ. Res.*, vol. 1, no. 1, pp. 1–4, 2021. https://doi.org/10.25082/AMLER.2021.01.001

[8] A. Das and B. Gambäck, "Code-mixing in social media text: The last language identification frontier?," *41–64*, vol. 54, no. 3, pp. 41–64, 2015.

[9] J. Sansoulet *et al.*, "Green edge outreach project: A large-scale public and educational initiative," *Polar Rec. (Gr. Brit).*, vol. 55, no. 4, pp. 227–234, 2019. https://doi.org/10.1017/S0032247419000123

[10] L. Boeschoten, I. I. van Driel, D. L. Oberski, and L. J. Pouwels, "Instagram use and the well-being of adolescents: Using deep learning to link social scientific self-reports with instagram data download packages," in *Companion Publication of the 2020 International Conference on Multimodal Interaction*, pp. 523–523, 2020. https://doi.org/10.1145/3395035.3425185

[11] T. Karakose, R. Yirci, and S. Papadakis, "Exploring the interrelationship between COVID-19 phobia, work–family conflict, family–work conflict, and life satisfaction among school administrators for advancing sustainable management," *Sustainability*, vol. 13, no. 15, p. 8654, 2021. https://doi.org/10.3390/su13158654

[12] A. Das Jamatia, Björn Gambäck, "Part-of-speech tagging for code-mixed English-Hindi twitter and facebook chat messages," *Int. Conf. Recent Adv. Nat. Lang. Process. RANLP*, vol. 2015-Janua, pp. 239–248, 2015.

[13] J. Aitchison and R. Wardaugh, *An Introduction to Sociolinguistics*, vol. 38, no. 3. 1987. https://doi.org/10.2307/590702

[14] B. Sutrisno and Y. Ariesta, "Advances in language and literary studies beyond the use of code mixing by social media influencers in instagram," no. c, 2019. https://doi.org/10.7575/aiac.alls.v.10n.6p.143

[15] I. A. Chughtai, M. A. Khan, and M. R. Khan, "Reasons and contexts to switch and mix english by Pakistani young learners in their native speech: A sociolinguistic study," *Int. J. Lang. Linguist.*, vol. 3, no. 1, pp. 85–94, 2016.

[16] W. Kongkerd, "Code switching and code mixing in facebook conversations in english among Thai users," *Executive J.*, vol. 35, pp. 126–132, 2015.

[17] A. Chanda, D. Das, and C. Mazumdar, "Unraveling the English-Bengali code-mixing phenomenon," pp. 80–89, 2016. https://doi.org/10.18653/v1/W16-5810

[18] Tsamratul'aeni, "Identifying code-mixing in the social media conversation (Instagram and Whatsapp)," *J. English Educ.*, vol. 4, no. 2, 2019. https://doi.org/10.31327/jee.v4i2.1109

[19] H. Haryati and R. Prayuana, "An analysis of code-mixing usage in Whatsapp groups conversation among lecturers of universitas Pamulang," *Ethical Ling. J. Lang. Teach. Lit.*, vol. 7, no. 2, 2020. https://doi.org/10.30605/25409190.180

[20] R. Wardhaugh and J. M. Fuller, *An introduction to sociolinguistics*. John Wiley & Sons, 2021.

[21] H. T. Ong, *Sociolinguistic Analysis of the New Testament: Theories and Applications*. Brill, 2021. https://doi.org/10.1163/9789004499744

[22] P. Musyken, *Bilingual Speech: A typology of Code Mixing*. Cambridge: Cambridge University Press, 2000.

[23] R. Wardhaugh, *An Introduction to Sociolinguistics*, Sixth Edit. Hong Kong: Wiley-Blackwell Publishing, 2010.

[24] N. Hakimov, *Explaining Russian-German code-mixing*. BoD–Books on Demand, 2021.

[25] A. Das and B. Gambäck, "Identifying languages at the word level in code-mixed Indian social media text," *Proc. 11th Int. Conf. Nat. Lang. Process.*, pp. 169–178, 2014.

[26] D. R. Mabule, "What is this? Is it code switching, code mixing or language alternating?," *J. Educ. Soc. Res.*, vol. 5, no. 1, pp. 339–350, 2015. https://doi.org/10.5901/jesr.2015.v5n1p339

[27] Sumarsono & Pratama, *Sosiolinguistik*. Yogyakarta: Sabda, 2004.

[28] C. Hoffmann, *Introduction to Bilingualism*. Taylor & Francis Online, 2014. https://doi.org/10.4324/9781315842035

[29] L. Miller, R., *Researching Life Stories and Family Histories*. London: Sage Publication, 2000. https://doi.org/10.4135/9781849209830

[30] E. M. Seppälä, E. Simon-Thomas, S. L. Brown, M. C. Worline, C. D. Cameron, and J. R. Doty, *The Oxford handbook of compassion science*. Oxford University Press, 2017. https://doi.org/10.1093/oxfordhb/9780190464684.001.0001

[31] R. Jenkins, "The generation Z guide: The complete manual to understand, recruit, and lead the next generation," *Atlanta Ryan Jenkins, LLC*, 2019.

[32] Bascha, "Generation Z: The open source generation," *opensource.com*, 2011. [Online]. Available: https://opensource.com/business/11/9/z-open-source-generation

[33] J. M. Spector, M. D. Merrill, J. Elen, and M. J. Bishop, *Handbook of Research on Educational Communications and Technology, pp. 413–424*. New York (NY): Springer, 2014. https://doi.org/10.1007/978-1-4614-3185-5

[34] S. Greenfield, *ID: The Quest for Meaning in the 21st Century*. Hodder & Stoughton, 2011.

[35] M. Prensky, "Digital natives, digital immigrants part 1," *Horiz.*, vol. 9, no. 5, pp. 1–6, 2001. https://doi.org/10.1108/10748120110424816

[36] D. Oblinger, J. L. Oblinger, and J. K. Lippincott, *Educating the Net Generation*. Boulder, Colo: EDUCAUSE, 2005.

[37] D. Tapscott, *Grown Up Digital: How the Net Generation is Changing Your World*. New York (NY): McGraw-Hill Education, 2008.

[38] M. Zampino, "So who are the centennials?," *SIG - Sourcing Industry Group*, 2020. [Online]. Available: https://sig.org/so-who-are-centennials. [Accessed: 01-Jun-2021].

[39] T. Karakose, R. Yirci, S. Papadakis, T. Y. Ozdemir, M. Demirkol, and H. Polat, "Science Mapping of the Global Knowledge Base on Management, Leadership, and Administration Related to COVID-19 for Promoting the Sustainability of Scientific Research," *Sustainability*, vol. 13, no. 17, p. 9631, 2021. https://doi.org/10.3390/su13179631

[40] P. Poláková and B. Klímová, "Mobile technology and generation Z in the english language classroom—A preliminary study," *Educ. Sci.*, vol. 9, no. 3, p. 203, Jul. 2019. https://doi.org/10.3390/educsci9030203

[41] E. McCrindle, M. & Wolfinger, *The ABC of XYZ: understanding the global generations.* University of New South Wales Press., 2010.

[42] J. E. Chukwuere and P. C. Chukwuere, "The impact of social media on social lifestyle: A case study of university female students," *Gend. Behav.*, vol. 15, no. 4, pp. 9966–9981, 2017.

[43] W. Akram and R. Kumar, "A study on positive and negative effects of social media on society," *Int. J. Comput. Sci. Eng.*, vol. 5, no. 10, pp. 351–354, 2017. https://doi.org/10.26438/ijcse/v5i10.351354

[44] M. Goyanes and M. Skoric, "Citizen (dis)engagement on social media: How the Catalan referendum crisis fostered a teflonic social media behaviour," *Mediterr. Polit.*, pp. 1–22, 2021. https://doi.org/10.1080/13629395.2021.1904349

[45] A. Lakshmi, A., "Chennai media student's impressions over the ever-evolving media industry," *Int. J. Adv. Res. Ideas Innov. Technol.*, vol. 7, no. 2, p. 712, 2021.

[46] H. Pönkä, *Sosiaalisen Median Käsikirja*. Jyväskylä: Docendo., 2014.

[47] D. Zarrella, *The Social Media Marketing*. Canada: O'Reilly Media Inc, 2010.

[48] T. L. Tuten, *Social Media Marketing*, 4th Editio. Singapore: SAGE Publication Asia-Pacific Pte Ltd, 2021.

[49] M. Nilashi *et al.*, "Recommendation agents and information sharing through social media for coronavirus outbreak," *Telemat. Informatics*, vol. 61, p. 101597, 2021. https://doi.org/10.1016/j.tele.2021.101597

[50] G. Grosseck, "To use or not to use web 2.0 in higher education?," *Procedia-Social Behav. Sci.*, vol. 1, no. 1, pp. 478–482, 2009. https://doi.org/10.1016/j.sbspro.2009.01.087

[51] A. Whiting and D. Williams, "Why people use social media: a uses and gratifications approach," *Qual. Mark. Res. an Int. J.*, vol. 16, no. 4, pp. 362–369, 2013. https://doi.org/10.1108/QMR-06-2013-0041

[52] Statista, "Most popular social networks worldwide as of October 2021 ranked by number of active users," 2021. [Online]. Available: https://www.statista.com/statistics/272014/global-social-networks-ranked-by-number-of-users/

[53] J. W. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 5th Edn. London, England: SAGE Publications, Inc., 2018.

[54] S. Mirhosseini, *Doing Qualitative Research in Language Education*. Germany: Springer International Publishing, 2020. https://doi.org/10.1007/978-3-030-56492-6

[55] Moedjito, *Basic Statistics for Research in Language Education*, First publ. Surakarta: Yuma Pustaka, 2016.

[56] Socialbuddy, "What does followers and following mean on instagram," 2021. [Online]. Available: https://socialbuddy.com/followers-and-following-on-instagram/. [Accessed: 01-May-2021].

[57] N. B. Boyd, D. M. and Ellison, "Social Network Sites: Definition, History, and Scholarship.," *J. Comput. Commun.*, vol. 13, no. 1, 2007. https://doi.org/10.1111/j.1083-6101.2007.00393.x

[58] L. Iaia, P, "Analysing english as a Lingua Franca in video games: Linguistic features, experiential and functional dimensions of online and scripted interactions," 2016. https://doi.org/10.3726/b10377

[59] J. D. Jimma, "Language of social media: Examination of english as a Lingua Franca in social media (doctoral dissertation)," University of Iceland, 2017.

[60] A. Campbell, "What is a hashtag? And what do you do with hashtags?," *Small Business Trends*, 2018. [Online]. Available: https://smallbiztrends.com/2018/10/anita-campbell-15-years-at-small-business-trends.html

[61] S. Papadakis, "The impact of coding apps to support young children in computational thinking and computational fluency. A literature review," *Front. Educ.*, vol. 6, p. 183, 2021. https://doi.org/10.3389/feduc.2021.657895

[62] E. Kim, "Reason and motivations for code-mixing and code-switching," *TESOL J.*, 2006.

9 Authors

Nafan Tarihoran is an Associate Professor at the English Education Department, State Islamic University Sultan Maulana Hasanuddin Banten. He completed his Doctor of Education at the State University of Jakarta and Master's degree from the University of Indonesia (UI). His main areas of interest are education and culture, particularly in curriculum development, teacher training, assessment, ICT for teaching, Media & instructional design, quantitative research, Islamic Education, and classroom action research. He joined some international programs, such as *International Training Programme on Leadership* Development (2014) at VV Giri National Labour Institute, Noida, India. *Academic Recharging Program on Islamic Education (2012)* at Georg-August Universitat Gottingen, Germany. *School Leadership and Management* (2010) at Sunshine Coast University, Queensland, Australia, and *Community Leader Program in Education* at Chicago and Alabama, the USA in 2012. Nafan was former dean of the Faculty of Education and Teacher Training and head of the English Education Department. He can be reached at nafan.tarihoran@uinbanten.ac.id. ORCHID: 0000-0001-9637-5947.

Eva Fachriyah is a Senior Lecturer at the Communication Sciences of Department, Faculty of Social and Political Sciences, Serang Raya University, Serang Banten, Indonesia. She can be reached at fachriyaheva@gmail.com. ORCHID: 0000-0002-8876-0527.

Tressyalina is a senior lecturer at the Indonesian Language Department, Faculty Language and Art, Universitas Negeri Padang, Indonesia. She can be reached at tressyalina@fbs.unp.ac.id. ORCHID: 0000-0002-4823-213X.

Iin Ratna Sumirat is a senior lecturer at State Islamic University Sultan Maulana Hasanuddin Banten. Her interests are Islamic studies and culture. She can be reached at iin.ratna.sumirat@uinbanten.ac.id.