

**A TOP SENIOR HIGH SCHOOL STUDENTS' PERCEPTIONS OF INCIDENTAL
LANGUAGE LEARNING BY PLAYING ROBLOX : A SURVEY STUDY**

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Degree in English Language Education



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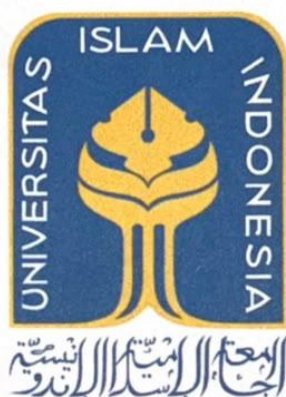
APPROVAL SHEET

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STATEMENT OF WORK'S ORIGINALITY

I honestly declare that my thesis, "A Top Senior High School Students' Perceptions Of Incidental Language Learning By Playing Roblox : A Survey Study" does not contain any material belonging to others except for material that is properly quoted and referenced in scientific works.

Yogyakarta, 13 July 2026



Shafiq Haykal Rizly Subiyakto

MOTTO

**Indeed, Allah will not change the condition of a people until they change what is
in themselves (13:11)**

*“As long as we are willing to try and never give up, we will always find a way to
succeed.”*

DEDICATION

Gratefully and thankfully, I dedicate this thesis to:

1. Bunda, who always supports me in every step I take.
2. My whole family, for their endless help and encouragement.
3. My girlfriend, for the warmth, laughter, and companionship we shared.
4. Everyone who has been part of this journey, thank you for the kindness, support, and contribution.

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Alhamdulillah *rabbil 'alamin*, all praise be to Allah, SWT, the Most Gracious and the Most Merciful. Blessings and peace be upon the Prophet Muhammad SAW. I am deeply grateful to Allah SWT for all the blessings, guidance, and strength that have enabled me to complete this thesis and go through my years of study successfully. My sincere gratitude goes to my beloved parents, Bunda, for their endless prayers, love, and support. I also express my gratitude to all my family members who have helped me throughout my study journey. Thank you for your constant prayers and encouragement.

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Yogyakarta, July 2026



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**A TOP SENIOR HIGH SCHOOL STUDENTS' PERCEPTIONS OF
INCIDENTAL LANGUAGE LEARNING BY PLAYING ROBLOX
: A SURVEY STUDY**

Abstract

As a prominent digital gaming platform, Roblox has increasingly been recognized for its potential in facilitating incidental language acquisition outside traditional classroom settings, but studies on the subject are still rare. Therefore, this quantitative descriptive study investigated the role of Roblox as a platform for incidental English language learning among students at a top senior high school in Yogyakarta. Referring to the theories of Incidental Language Learning (ILL) and Game-Based Language Learning (GBLL), the research examined how game environments facilitated language acquisition without intentional study. Data were collected from 120 respondents through a 20-item questionnaire using a 5-point Likert scale, measuring three primary domains: game mechanics, linguistic competence, and the role of the Roblox as a facilitator. The findings indicated that, based on students' perceptions, Roblox appears to play a positive role in incidental learning, with 77.5% of participants falling into the "High" category. Within the game mechanics domain, the study found that students perceived themselves as acquiring vocabulary and verbs effectively through direct actions and visual clues, such as icons and symbols, which helped contextualize difficult texts. In terms of linguistic competence, the results suggest that the platform may enhance understanding of slang, abbreviations, and natural expressions rarely found in textbooks, while also encouraging writing practice through chat features. The role of facilitator was primarily manifested through reduced language anxiety; the anonymity of using avatars was reported to help students to feel braver in communicating with international players without the fear of making mistakes. The researcher concluded that while Roblox may appear to be a useful supplementary tool for vocabulary acquisition and communicative confidence, its impact on formal grammar remains moderate, suggesting it serves best as a supportive medium alongside structured formal education.

Keywords: Game-Based Learning, Incidental Language Learning, Roblox

CHAPTER I

INTRODUCTION

Nowadays, students' interaction with digital technology has significantly expanded, especially in online gaming. Roblox has appeared as a widely digital platform for teens, functioning as a massive multiplayer online game where players globally interact and collaborate. Because Roblox operates on international servers, English serves as the primary media of communication. To succeed, complete the quest, and interact with other players in the game, students are naturally forced to understand the instructions and communicate in English. This continuous exposure to the language, driven by the desire to play rather than the intention to study, creates a natural language acquisition process known as Incidental Language Learning. According to Marsick and Watkins (2001), incidental learning is strictly defined as a byproduct of some other primary activity, such as task accomplishment, trial and error experimentation, or interpersonal interaction. In this cognitive process, the learning acquisition almost always takes place even though the individuals are not always fully conscious of it. Consequently, the linguistic knowledge gained through this method is typically taken for granted, tacit, or unconsciously absorbed during the activity.

While the concept of learning English through digital games is widely acknowledged, comprehensive research specifically addressing how platforms like Roblox facilitate incidental language learning is still limited. Recent research specifically focusing on Roblox by Hasani et al. (2025) has proven that Roblox serves as an effective medium for vocabulary development by providing interactive and highly contextualized environments, such as game dialogue, instructions, and item descriptions. This platform enhances memory retention by allowing learners to associate linguistic input with auditory and visual elements, such as

characters and in-game imagery. Furthermore, Roblox fosters experiential learning through a learning-by-doing approach; students internalize language naturally as they perform direct actions such as building objects or completing quests rather than relying on rote memorization. The repetitive exposure to language across various gaming scenarios ultimately leads to long-term vocabulary retention. This aligns with earlier findings by Wiyuna et al. (2024), which highlight that Roblox possesses broader educational affordances, specifically in fostering student engagement, collaborative problem solving, and communication skills. Collectively, these studies suggest that when thoughtfully incorporated into educational frameworks, Roblox functions as a versatile and multifaceted learning platform (Tejaswini et al., 2024). However, these existing studies predominantly focus on the end outcome, without comprehensively investigating specific game mechanics and facilitating factors that drive this incidental learning.

There is a clear research gap regarding how specific elements within Roblox work together to construct an incidental learning ecosystem. Because no prior research has comprehensively discussed these interconnected factors. This current study is crucial to conduct. It is important to understand not just 'if' students learn, but 'how' game mechanics and Roblox' role as a facilitator contribute to their linguistic competence. Based on the gap identified above, this study addresses the following research questions:

1. How do students perceive the role of Roblox's game mechanics in facilitating their incidental English learning?
2. How do students perceive the influence of playing Roblox on their linguistic competence?

3. How do students perceive the role of Roblox as a facilitator of incidental English learning?

Therefore, this study aims to fill the gap by investigating the role of Roblox in incidental learning, specifically at a top senior high school in Yogyakarta where students are active digital citizens, the term 'top' is strictly defined by the school's verified academic and non-academic achievements. Based on national data, the school consistently ranks at the highest level in the national university entrance examination (UTBK). Because of this highly competitive environment, the students generally have high learning motivation and cognitive engagement, including in their daily interactions with digital platforms like Roblox. Therefore, they are the ideal subjects to observe how incidental language learning occurs naturally among highly capable students." This study seeks to identify students' perceptions regarding which English skills are improved and to explore the role of Roblox and the game mechanics to improve their English. By mapping out those elements, this research will provide new insights for English teachers, proving that the time students spend in the game can be a valuable source of language acquisition rather than a mere distraction.

CHAPTER II

LITERATURE REVIEW

2.1 Incidental Language Learning

The primary theoretical foundation of this research is Incidental Language Learning (ILL). Incidental language learning is conceptually distinguished from intentional learning by its lack of explicit educational intent. According to Marsick and Watkins (2001), incidental learning is defined as an unintended byproduct of some other primary activities, which may include task accomplishment, interpersonal interactions, or trial-and-error experimentations. In digital environments such as online gaming, the primary objective of the users is typically focused on completing in-game tasks or engaging in social communication, rather than explicit language acquisition. Consequently, the linguistic development that occurs during these activities is often taken for granted, tacit, or completely unconscious. Although learners are not always aware of the learning process at the moment it occurs, this implicit acquisition allows them to naturally absorb language features through meaningful contextual exposure.

The concept of Incidental Language Learning (ILL) in this study is updated based on the definition proposed by Hulstijn (2012). He defines incidental learning as ‘incidental learning of language forms’ (p. 1) that occurs when learners focus more on understanding the meaning of a message than intentionally memorizing the language itself. Incidental learning happens as an outcome of communicative activity, which is the opposite of intentional learning, which has the primary objective of mastering grammar or vocabulary.

This theory is useful in the context of Roblox. When students play Roblox, their main attention is to the game's objectives, such as completing quests, exchanging things, and

communicating with others. They process English text and audio not to learn, but to survive and win in the game environment. As Hulstijn (2012) states, because learners are engaged in ‘meaning-focused processing,’ vocabulary and linguistic structures are acquired naturally and stored effectively in their memory without the pressure of formal instruction.

2.1.1 Incidental Learning in Game-based Language Learning

If incidental learning explains the process, Game-Based Language Learning (GBLL) provides the environment. This study focuses on Roblox, a type of Massively Multiplayer Online (MMO) game. Gee (2003), one of the famous researchers in this field, argues that good video games are essentially ‘learning machines.’ He states that games provide ‘meaning embedded in context,’ where words are not just abstract definitions but are tied to images, actions, and goals. When a player sees the word ‘jump’ and must press a button to make the character jump, that meaning is learned physically and visually.

Furthermore, Thorne (2008) explains the social nature of this environment. He explains that MMOs function as ‘intercultural spaces’ where learners interact with people from different backgrounds. This real-time interaction is crucial. Peterson (2013) adds that the ‘anonymity’ of the gaming environment helps students feel safer. Because they are represented by avatars, they are less embarrassed to make mistakes than in a real classroom. The combination of Gee's “active learning” method and Thorne's “social interaction” makes Roblox a unique tool that is more dynamic than textbooks.

2.2 Review of Relevant Studies

Recent studies have increasingly examined how digital games and extramural environments contribute to English language learning outside the classroom. Sundqvist & Sylvén (2016) introduced the concept of Extramural English, emphasizing that learners often develop their language skills through activities such as gaming rather than through formal instruction alone. These studies suggest that the quantity of exposure, even outside structured settings, plays an important role in language development.

In the context of game-based learning, the role of interaction and engagement has been widely discussed. Reinhardt (2019) argued that digital games create “gameful” learning environments where learners are actively involved in meaning-making processes. This idea is further supported by Plass et al. (2020), who explained that game-based learning integrates goals, feedback, and interaction, allowing learners to process language while focusing on task completion. The practical application of these principles is evident in multiplayer online games, where in-game communication is crucial for success. For instance, Hapsari et al. (2018) demonstrated that games like *Defense of the Ancients 2* (DoTA 2) facilitate incidental English language learning through social interaction and strategic planning. Their study found that gamers are highly motivated to communicate in English via chat rooms and voice chats to collaborate with teammates and win battles. This suggests that the enjoyment and necessity of in-game communication naturally drive learners to practice reading, writing, listening, and speaking skills without explicit pedagogical intent. Compared to traditional learning, these environments shift the focus from memorization to experience-based learning, which aligns closely with incidental learning principles.

Moreover, the role of multimodal input has been highlighted in recent studies. Mayer (2020), through the Cognitive Theory of Multimedia Learning, explained that learners understand information more effectively when it is presented through both verbal and visual channels. This is particularly relevant in digital games, where language is often combined with images, symbols, and actions. Similarly, Robert Godwin-Jones (2018) emphasized that digital technologies, including games, allow learners to connect language with real-world contexts and actions, making learning more meaningful and practical. These perspectives indicate that language learning in digital environments is not limited to text but involves multiple forms of input that support comprehension.

Building upon these multimodal and game-based perspectives, it becomes evident how digital environments facilitate incidental learning. In this context, incidental learning is considered a byproduct of engaging in a primary task, where the knowledge acquired is naturally taken for granted, tacit, or unconsciously absorbed during the activity. While the concept of learning English through digital games is widely acknowledged, comprehensive research specifically addressing how platforms like Roblox facilitate incidental language learning is still limited. Recent research specifically focusing on Roblox by Hasani et al. (2025) has proven that Roblox serves as an effective medium for vocabulary development by providing interactive and highly contextualized environments, such as game dialogue, instructions, and item descriptions. This platform enhances memory retention by allowing learners to associate linguistic input with auditory and visual elements, such as characters and in-game imagery.

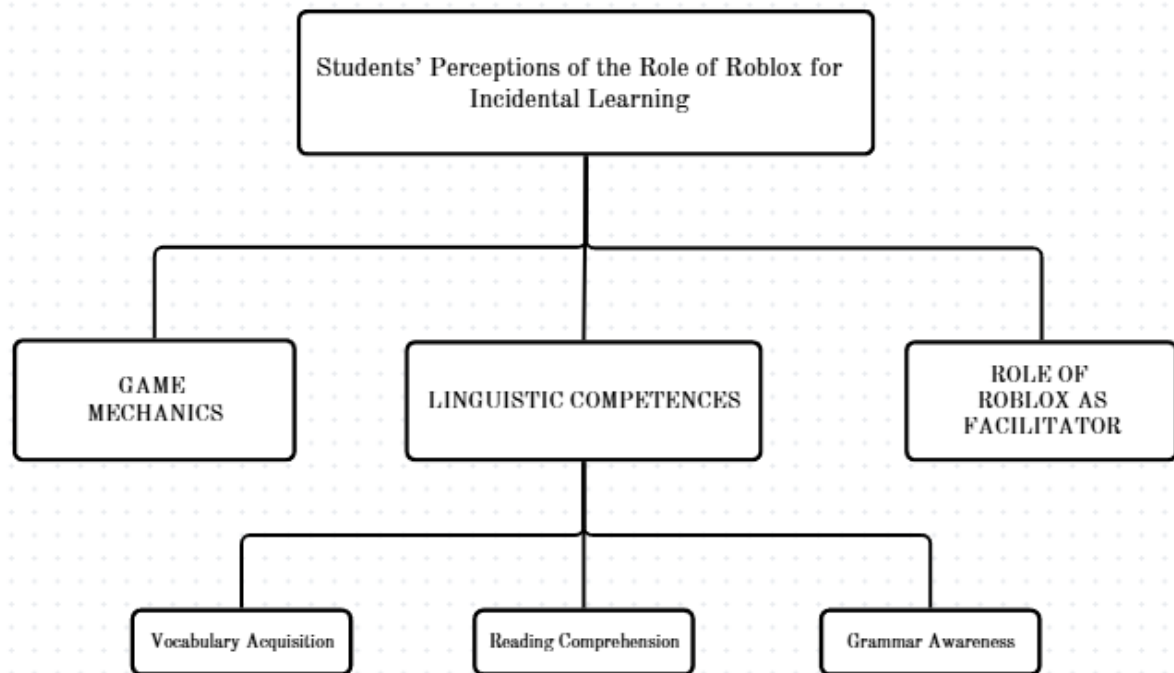
Furthermore, Roblox fosters experiential learning through a learning-by-doing approach; students internalize language naturally as they perform direct actions such as

building objects or completing quests rather than relying on rote memorization. The repetitive exposure to language across various gaming scenarios ultimately leads to long-term vocabulary retention. This aligns with earlier findings by Wiyuna et al. (2024), which highlight that Roblox possesses broader educational affordances, specifically in fostering student engagement, collaborative problem-solving, and communication skills. Collectively, these studies suggest that when thoughtfully incorporated into educational frameworks, Roblox functions as a versatile and multifaceted learning platform (Tejaswini et al., 2024).

However, these existing studies predominantly focus on the end outcome, without comprehensively investigating specific game mechanics and facilitating factors that drive this incidental learning. Therefore, this study attempts to fill this gap by analyzing Roblox not only as a general learning environment but specifically through its game mechanics and its role as a facilitator, providing a more detailed understanding of how incidental learning influences students' linguistic competence.

2.3 Theoretical Framework

Figure 2.1. Theoretical Framework



The basis of this study is the theory of Incidental Language Learning (ILL). According to Marsick and Watkins (2001), incidental learning described situations when students got new knowledge without any intention to learn. Students were not trying to memorize the language but learn naturally while they were doing other things. According to Hulstijn (2012), incidental learning is formally defined as the acquisition of a word or linguistic element without the conscious intention to commit the element to memory. This mechanism differs fundamentally from intentional learning, where learners deliberately focus on memorizing language forms. Within video games like Roblox, players do not explicitly intend to study English; instead, their primary cognitive effort is directed toward gameplay and task completion. This process aligns with Hulstijn's (2012) view, as learners naturally acquire new vocabulary because they focus heavily on understanding the 'meaning' of

messages within the game rather than analyzing formal grammar rules. Consequently, language acquisition occurs naturally as a byproduct of meaningful interaction.

Figure 2.2. Screenshot of example interaction in Roblox



This framework linked the learning process to specific outcomes, that is English language proficiency. As stated by Gee (2003), video games act as ‘learning machines’ where words are linked to actions and images. Because the students were active in playing the game, they naturally improved their three specific English skills which are shown in the figure, namely: vocabulary acquisition (Bytheway, 2014), reading comprehension (Steinkuehler, 2010), and grammar awareness (Sadeghi & Dousti, 2013)

This framework illustrated that playing digital games like Roblox extends beyond mere entertainment; rather, it served as a unique medium to facilitate the acquisition of specific language dimensions as depicted in Figure 2.1 (Gee, 2003; Peterson, 2013).

CHAPTER III

RESEARCH METHODOLOGY

3.1 Research Design

This study utilized a quantitative descriptive (Creswell, 2017). This research design was chosen because it aligns with the main objective of this study, which described and analyzed students' perceptions regarding the role of Roblox in their incidental learning. By using a descriptive approach, the researcher investigated the status of the phenomenon as it naturally occurred without manipulating the environment or adding any intervention. Furthermore, this research design enabled researchers to present a structured and measurable summary of the data across the investigated objectives: game mechanics, linguistic competence, and the role of facilitator.

3.2 Participants and Setting

The participants of this study were selected from the 10th and 11th grade students at a top senior high school in Yogyakarta. The researcher specifically only selected students from Grade 10 and Grade 11 to participate in this study because Grade 12 students were no longer attending regular classes because they already finished the final exam and school policy had directed them to focus entirely on intensive preparation for the national university entrance examination (UTBK). Therefore, involving Grade 10 and 11 students was the most feasible and effective approach to gather the data.

The total population comprised 14 classes (7 classes for each grade), with an estimated total of 400 students. To gather the data, the researcher entered 7 classes (selected

by the teacher) as the sampling pool, consisting of 4 classes from the 11th grade and 3 classes from the 10th grade, which estimated approximately 200 students. A purposive sampling technique was applied in this study, where the primary inclusion criterion required the participants to be active players of Roblox. Out of the 200 students in the selected classes, a total of 120 students met this criterion and successfully completed the questionnaire. Therefore, these 120 students served as the final sample for this research. Furthermore, to ensure that the 120 selected participants were indeed active Roblox players, a direct screening method was applied prior to distributing the questionnaire. The researcher verified their status by asking the students to physically show the Roblox application installed on their personal devices, whether on a smartphone, tablet, or laptop.

This specific school was purposefully selected because it is officially recognized as one of the most excellent schools in the province and at the national level. Its 'top' status is supported by empirical data, such as consistently securing a position in the elite tier of the Top 1000 National Schools with a highly competitive average UTBK score, possessing a massive state university acceptance rate, and having a strong track record of winning national and international competitions. These characteristics provide a justification that the participants come from a highly literate and cognitively engaged learning environment, making them ideal subjects to observe incidental language learning through digital platforms.

There were several criteria used to select these participants. First, they were active Roblox players, and more specifically, global servers where players had to communicate in English. Second, they had regular and easy access to digital devices and the internet. Third, these students were described as active learners with decent basic English skills. The combination of a strong academic background and active participation in international

gaming platforms resulted in a special case where the process of incidental language learning was very clearly visible.

3.3 Data Collection Technique

The data for this study were collected through a survey procedure with a questionnaire adapted from Okumuş & Gürbüz (2023) and developed based on incidental learning, game mechanics, and social interaction theories (Okumuş & Gürbüz, 2023; Hulstijn, 2012; Gee, 2003; Peterson, 2013; Thorne, 2008). In the adaptation process, the original context of watching films was changed into playing Roblox. For example, an original item stating "Do you believe that while watching English TV series/films for enjoyment, your viewing mode preference (subtitle, caption, no caption/subtitle) contributes to your vocabulary knowledge?" was modified into "I believe that playing Roblox is an effective and enjoyable way to improve my English vocabulary." Irrelevant questions about subtitle preferences were deleted, and 9 modified questions remained which addressed vocabulary, grammar, and habits. 11 new items were added to make sure that the instrument addressed the unique features of Roblox. Specifically, these new items were developed based on specific dimensions of the theories: Gee's (2003) game mechanics focusing on situated meaning (linking language to visual clues and actions), and Thorne's (2008) and Peterson's (2013) social interactions focusing on intercultural communication with global players and identity anonymity through avatars. The questionnaire used in this study (Appendix 1) had 20 items and was designed to measure students' incidental learning experiences across three specific objectives: game mechanics, linguistic competence, and the role of Roblox as facilitator. The detailed blueprint of the questionnaire, including the sub-themes, item distribution, and the sources of adaptation, is presented in Table 3.1 below.

Table 3.1. Blueprint of the Questionnaire

Variable	Indicator	Item No.	Original Source (Reference)
Game Mechanics	Attention to Text	2	Okumuş & Gürbüz
Game Mechanics	Focus on Meaning	4	Hulstijn (2012)
Game Mechanics	Forced Use	6	Jenkins (1933)
Game Mechanics	Multimodality	7	Gee (2013)
Game Mechanics	Situated Meaning	8	Gee (2013)
Game Mechanics	Visual Clues	9	Gee (2013) / Draft
Game Mechanics	Retention (Memorable)	10	Okumuş & Gürbüz
Linguistic Competence	Unintentional Learning	3	Jenkins (1933)
Linguistic Competence	Slang & Idioms	12	Okumuş & Gürbüz
Linguistic Competence	Grammar	13	Okumuş & Gürbüz
Linguistic Competence	Reading Speed	14	Draft (Objective 2)
Linguistic Competence	Learning Strategy	15	Okumuş & Gürbüz
Linguistic Competence	Writing Production	17	Thorne (2008)
Linguistic Competence	Authentic Language	19	Okumuş & Gürbüz
Role of Facilitator	Frequency	1	Okumuş & Gürbüz
Role of Facilitator	Effectiveness	5	Okumuş & Gürbüz

Role of Facilitator	Ease of Learning	11	Okumuş & Gürbüz
Role of Facilitator	Intercultural Contact	16	Thorne (2008)
Role of Facilitator	Low Anxiety (Anonymity)	18	Peterson (2013)
Role of Facilitator	Value of Gaming	20	Draft (Conclusion)

After that, to gather data, the researcher implemented some systematic steps. During the preparation phase, the 20-item questionnaire was first converted to an online format using Google Forms. After that, the form was distributed by sharing the link ([appendix 1](#)) directly to the participants. During the completion phase, the participants were ensured to complete their responses voluntarily, without any pressure, reflecting their own experiences.

3.4 Data Analysis Technique

The data were analyzed descriptively using Jamovi, focusing on the role of Roblox in incidental English learning based on three main aspects: Game Mechanics, Linguistic Competence, and Role of Facilitator.

The first step was screening the data for duplication and incomplete responses to ensure only valid data were analyzed. The next step was finding the general trends (mean, standard deviation, and percentage) and the distribution of students' experiences in the use of Roblox for incidental learning. To interpret the mean scores, the researcher categorized the results into three levels: Low, Medium, and High. The interval for each category was determined by calculating the range (5-1) divided by the number of levels (3). This classification and cut-off points were adopted from Best (1977) as shown in the table below:

Table 3.2. The classification of the score

Mean Score Range	Category	Interpretation
3.67 – 5.00	High	Roblox gives a strong impact.
2.34 – 3.66	Medium	Roblox gives a moderate impact.
1.00 – 2.33	Low	Roblox gives a weak impact.

The fourth step is connecting to objectives. The data that have been analyzed will be matched to the study objectives. The researcher investigated which numbers responded to the inquiry "Role of Facilitator," which numbers characterized "Game Mechanics," and which numbers showed an increase in Linguistic Competence. The final step was reporting writing, where the researcher presented the results and data using graphics and tables to help readers understand the findings.

3.5 Validity and Reliability

To make sure of the quality of data, the researcher checked the validity and reliability of the questionnaire. In this research, the researcher used constructs and content for validity and Cronbach's alpha for reliability.

For the content validity, the researcher used Expert Judgment. The evaluation form used for this expert review is attached in [Appendix 2](#). The expert checked whether the 20 questions truly matched the theories of "Incidental Learning" by Marsick and Watkins (2001) and Hulstijn (2012), "Game Mechanics" by Gee (2003), and "Social Interaction" by Peterson (2016) and Thorne (2008). The expert also checked if the questions were categorized

correctly. If the expert found any confusing questions, the researcher revised them based on the expert's feedback to ensure the content was accurate.

To test the construct validity of all 20 questionnaire items, a Confirmatory Factor Analysis (CFA) was conducted using Jamovi software (v2.7.26) with data from 120 respondents. The CFA was used to confirm if all 20 items fit into the three predefined factors: Game Mechanics, Linguistic Competence, and Role of Facilitator. The complete statistical results are presented in Table 3.3.

Table 3.3. Factor Loadings from Confirmatory Factor Analysis (CFA)

Factor	Indicator	Estimate	SE	Z	p
Game Mechanics	Q2	0.449	0.0887	5.06	<.001
	Q4	0.334	0.0935	3.57	<.001
	Q6	0.551	0.0767	7.18	<.001
	Q7	0.549	0.0697	7.87	<.001
	Q8	0.476	0.0769	6.19	<.001
	Q9	0.440	0.0714	6.15	<.001
	Q10	0.625	0.0690	9.07	<.001
Linguistic Competence	Q3	0.459	0.0769	5.97	<.001
	Q12	0.623	0.0713	8.73	<.001
	Q13	0.559	0.0952	5.87	<.001
	Q14	0.582	0.0746	7.81	<.001
	Q15	0.348	0.1137	3.06	.002
	Q17	0.596	0.0837	7.12	<.001
	Q19	0.540	0.0674	8.01	<.001

Role of Facilitator	Q1	0.631	0.1224	5.16	<.001
	Q5	0.634	0.0776	8.17	<.001
	Q11	0.424	0.0797	5.32	<.001
	Q16	0.737	0.0847	8.70	<.001
	Q18	0.575	0.0841	6.84	<.001
	Q20	0.620	0.0918	6.76	<.001

Based on Table 3.3, the CFA results show that all 20 indicators are statistically significant. Nineteen items have a p-value of $< .001$, and item Q15 has a p-value of .002. This means that every question successfully measures its intended factor. Most of the items show strong factor loadings (Estimate) above 0.40. However, there are two items with factor loadings between 0.30 and 0.40, which are Q4 (0.334) in Game Mechanics and Q15 (0.348) in Linguistic Competence. According to statistical theory by Hair et al. (2010), factor loadings between 0.30 and 0.40 are still acceptable and considered to meet the minimal level for interpretation, especially for a sample size around 120 respondents. Because Q4 and Q15 have highly significant p-values and are theoretically important to keep the questionnaire complete, these two items are retained. In conclusion, all 20 items demonstrate good construct validity and are kept for the final data analysis.

The researcher applied for the reliability test to test the consistency of the instrument. Statistical reliability was calculated using Cronbach's Alpha coefficient, using Jamovi software. The result of the reliability analysis showed that Cronbach's Alpha score was 0.899. The score indicated "Good" internal consistency of the instrument based on the classification

by George & Mallery (2003) and the items were highly reliable for measuring the variables intended to be measured.

Table 3.4. Reliability Analysis

Scale Reliability Statistics	
	Cronbach's α
scale	0.899

CHAPTER IV

FINDINGS AND DISCUSSIONS

4.1 Findings

To see overall results of the role of Roblox in incidental language learning, researchers categorize the participants' responses into three levels: high, medium, and low.

Table 4.1. Students perceived Role of Roblox in Incidental Learning

Role of Roblox	Counts	% of Total	Cumulative %
High	93	77.50%	77.50%
Medium	27	22.50%	100.00%

Based on table 4.1, 77,5% of the students (93 out of 120) fell into the high category regarding their positive experience when playing Roblox. This meant for most students, Roblox was perceived as an effective platform to learn English outside of school. Furthermore, there are no students that are in the low category, which indicated that every student who played Roblox reported at least some benefits for their English skills.

To provide a more detailed analysis, the researcher broke down the findings into three main aspects: Game Mechanics, Linguistic Competence, and the Role of Facilitator. The findings indicated that the mean scores of all aspects were categorized as "High" when applying the classification adapted from Best (1977). The mean of Game Mechanics aspect has been discovered to be the highest ($M = 4.20$, $SD = 0.570$), followed by Linguistic Competence ($M = 4.01$, $SD = 0.621$), and the Role of Facilitator ($M = 3.94$, $SD = 0.703$). The result showed that overall, the students showed positive responses regarding the role of

Roblox in their incidental English learning, with a total mean score of 4.05. The mean scores of the aspects were summarized in Table 4.2 below:

Table 4.2. Mean per aspects

Mean Per Aspects	N	Mean	SD
Game Mechanics	120	4.2	0.57
Linguistic Competence	120	4.01	0.621
Role of Facilitator	120	3.94	0.703
Overall Mean (Total)	120	4.05	0.631

4.1.1 Game Mechanics

The first aspect was to analyze how the “Game Mechanics” or the technical systems inside Roblox helped students learn. Game mechanics included missions, instructions, visual icons, and the actions players had to perform. This category received the highest mean score of 4.20, which was categorized as “High”. This category consisted of 7 questions: Q2, Q4, Q6, Q7, Q8, Q9, and Q10.

Table 4.3. Mean per questions of game mechanics

Question Number	Statement	Mean Score
Q8	I understand the meaning of verbs by directly performing the actions in the game.	4.46
Q9	Visual clues (icons, symbols) help me understand difficult English texts.	4.28

Question Number	Statement	Mean Score
Q7	I remember English words easily because they are connected to images or actions.	4.24
Q6	The situations in the game naturally force me to use English to progress	4.22
Q2	I always pay attention to the English texts or instructions that appear on the screen.	4.14
Q4	I read English texts in Roblox primarily to complete missions or win the game.	4.12
Q10	The exciting experience makes the vocabulary I encounter hard to forget.	3.95

The “Game Mechanics” aspect had the highest score because the game “forced” players to understand English to succeed. In Q8, the mean score was the highest at 4.46. This indicated that students learned verbs (such as ‘trade’, ‘buy’, and ‘run’) not by memorizing them, but by performing actions in the game. This was a very effective way of learning. Additionally, Q9 (4.28) showed that visual clues such as icons and symbols helped students understand the context even if they did not know the exact words. This created a bridge between the game environment and the English language. In short, students paid attention to English text (Q2) not because they wanted to study, but because they wanted to win the game (Q4), which reflected the core idea of incidental learning.

4.1.2 Linguistic Competence

The second aspect was to measure the impact on students’ linguistic competence or their actual language skills. This included the use of slang, vocabulary, reading speed, and

grammar. The mean score for this category was 4.01, which was categorized as “High”. This category consisted of 7 questions: Q3, Q12, Q13, Q14, Q15, Q17, and Q19.

Table 4.4. Mean per questions of linguistic competence

Question Number	Statement	Mean Score
Q12	Playing Roblox helps me understand English slang and abbreviations.	4.17
Q19	The dialogues teach me 'authentic' (natural) expressions not found in books.	4.15
Q17	The chat box feature encourages me to try writing English sentences.	4.12
Q3	I learned new English words in Roblox unintentionally.	4.07
Q14	Because the game moves fast, my reading speed has improved.	3.96
Q13	I started to understand correct English sentence patterns (grammar).	3.82
Q15	I use a dictionary or Google Translate if I find a difficult word in Roblox.	3.78

The findings in this section showed students agreed that Roblox helped students move beyond the classroom. Q12 (4.17) and Q19 (4.15) showed that students learned slang and

natural expressions that native speakers used. This type of language was often missing in textbooks. The chat box (Q17) also acted as a space for writing practice. Even though the grammar score (Q13) was slightly lower at 3.82, it was still categorized as “High”, suggesting that continuous exposure to correct dialogues helped students become familiar with English sentence structures. Importantly, Q3 (4.07) confirmed the main theory that most of this learning occurred unintentionally.

4.1.3 Role of Roblox as Facilitator of Learning

The last aspect was to understand how Roblox acted as a “Facilitator” for learning. In this context, a facilitator was something that made the learning process easier, more enjoyable, and less stressful. The mean score for this category was 3.94, which was categorized as “High”. This category consisted of 6 questions from the questionnaire: Q1, Q5, Q11, Q16, Q18, and Q20.

Table 4.5. Mean per questions of role of facilitator

Question Number	Statement	Mean Score
Q11	Learning English through Roblox feels easier and less boring than learning from textbooks.	4.18
Q5	I believe that playing Roblox is an effective and enjoyable way to improve my English vocabulary.	4.14
Q16	I enjoy interacting with players from other countries in Roblox using English.	4.13
Q20	I realize that my time spent playing Roblox is valuable for improving my English skills.	4.11

Question Number	Statement	Mean Score
Q18	I am not afraid of making mistakes in English on Roblox because I use an avatar and do not meet people face-to-face.	3.84
Q1	I always play Roblox on servers that use English language every day for at least one hour.	3.25

The data showed that students felt that Roblox was a fun environment (Q5 and Q11). Because it was a game, students did not feel like they were studying, which made them more open to receiving new information. One of the most important findings was in Q18, where the mean score was 3.84. This showed that the anonymity feature of Roblox, where students used avatars, helped them feel braver. They were not afraid of making mistakes because other players did not see their real faces. This reduced language anxiety, which was often a major problem in traditional classrooms. Furthermore, the high score in Q16 indicated that the social nature of Roblox facilitated real-world communication with international players.

4.2 Discussions

4.2.1 The Role of Game Mechanics in Supporting Incidental Learning

The first findings showed that game mechanics had the highest mean score (4.20) to affect language learning. This result indicated that elements such as missions, instructions, and visual features were closely related to students' learning experiences. The results from Q2, Q4, and Q6 showed that students paid attention to English instructions to complete tasks. This finding was similar to Sinar et al. (2023), who found that students learn language

through interaction with game systems, not only through text but also through actions and visuals. In addition, Plass et al. (2020) explained that game-based environments support learning by combining goals, feedback, and interaction.

The data from Q8 suggested that students learned verbs through actions. Instead of memorizing vocabulary, they experienced the meaning directly while playing. This supports findings from Robert Godwin-Jones (2018), who stated that digital games can connect language with actions, making learning more meaningful. Moreover, Q9 showed that visual elements such as icons helped students understand meaning even when they did not know all the words. According to Mayer's Multimedia Learning Theory (2020), combining text and visuals can support comprehension because learners process information through multiple channels.

These findings indicated that game mechanics may support incidental learning by connecting language with goals, actions, and visual context. In this situation, students focused on completing tasks, while language learning occurred as a by-product of that process.

4.2.2 The Role of Students' Linguistic Competence on Students' Incidental Learning

The other findings of this study indicate that Roblox may have an influence on students' English skills, as shown by the high mean score (4.01). This result is in line with earlier studies about digital games and language learning (Achol & Akter, 2022; Hasani et al., 2025; Peterson, 2016; Uchihara & Harada, 2018). For example, Hasani et al. (2025) found that playing Roblox can increase students' vocabulary due to the chances to use language in real communication Peterson (2016). The high scores in Q3, Q12, and Q19 support this

finding as participants reported learning new words, slang, and natural expressions while playing. This shows that Roblox helps students experience English as it is used in real life, not only in formal classroom contexts.

Roblox may improve students' linguistic competence because of several key reasons. First, students are exposed to English repeatedly while playing, which helps them remember new vocabulary more easily. Second, the game provides authentic input, such as informal expressions and abbreviations that are commonly used by native speakers. Third, the interactive features, especially the chat box, encourage students to produce language actively. Based on Q17, students try to write sentences to communicate with others, even if their grammar is not perfect. These conditions create a natural learning process where students practice both understanding and using English at the same time.

These explanations are also supported by previous research. Uchihara & Harada (2018) found that repeated exposure plays an important role in vocabulary development. At the same time, Achol & Akter (2022) found that games are more effective in improving vocabulary and communication than grammar accuracy. This is similar to the findings in this study, where grammar (Q13) has a slightly lower score. Therefore, it suggested that Roblox may support linguistic competence mainly through exposure, interaction, and authentic language use, even though its effect on grammar is not as strong.

4.2.3 The Role of Roblox as a Facilitator in Incidental Learning

Other findings of this study indicated that Roblox may have a role as a facilitator in incidental English learning, as reflected in the mean score of 3.94, which was categorized as high. This finding was consistent with studies on game-based language learning in recent years (Lee, 2019; Peterson, 2016; Reinhardt, 2019; Sundqvist & Sylén, 2016). For instance,

Sundqvist & Sylvén (2016) introduced the concept of Extramural English, where students are exposed to English outside the classroom through activities such as gaming. In this context, Roblox can be seen as one of the environments where such exposure occurs. The results in Q5 and Q11 showed that students perceived learning through Roblox as more enjoyable compared to traditional materials. This condition may support incidental learning because students were engaged in the activity without focusing directly on language learning.

In addition, the data from Q18 suggested that the use of avatars reduced students' fear of making mistakes. This finding aligned with recent work by Peterson (2016), who explained that online environments may reduce anxiety and encourage participation. When students feel less anxious, they are more likely to engage in communication. Furthermore, Q16 showed that students interacted with international players. This interaction may provide opportunities for meaningful communication. Reinhardt (2019) explained that online gaming environments can function as spaces for intercultural communication, where learners use language for real purposes.

Overall, these findings suggested that Roblox created conditions such as enjoyment, reduced anxiety, and opportunities for interaction, which may support incidental English learning.

4.2.4 Overall Role of Roblox on Incidental Learning

The final discussion focuses on the overall impact of Roblox. Based on the findings, 77.5% of students are in the high impact category, and none are in the low category. This shows that Roblox may be an alternative platform for learning English. This result supports many previous studies, such as Hasani et al. (2025), which found that Roblox improves

vocabulary, and Sundqvist & Sylvén (2016), who explain that students learn English through activities outside the classroom. Roblox can be considered as a form of “Extramural English,” where learning happens naturally during daily activities.

The results also show that Roblox combines three important elements: enjoyment, interaction, and meaningful exposure. Students enjoy playing, interacting with others, and are exposed to English continuously. This combination creates a powerful learning environment. However, it is important to note that Roblox cannot fully replace formal education. As shown in the grammar findings, students still need structured learning to fully understand language rules. Therefore, Roblox should be seen as a supportive tool, not a replacement for teachers.

In conclusion, based on students’ perception, Roblox may support incidental English learning. It helps students learn naturally, improves their confidence, and provides real communication experiences. This makes Roblox a valuable tool for supporting English learning outside the classroom.

CHAPTER V

CONCLUSIONS AND SUGGESTIONS

5.1 Conclusions and Suggestions

This study examined the role of Roblox in supporting incidental English learning among senior high school students. The study was grounded in the theory of incidental learning, particularly the idea that language acquisition can occur naturally when learners focus on meaning rather than form Hulstijn (2012). It also drew on the concept of Extramural English by Sundqvist & Sylvén (2016), which emphasizes learning outside the classroom through activities such as gaming. In addition, this study considered perspectives from game-based learning, which highlight the importance of interaction, engagement, and meaningful experiences in digital environments. This research used a quantitative descriptive design. The data were collected from 120 students through a questionnaire consisting of 20 items using a 5-point Likert scale. The analysis was conducted using Jamovi software. The study focused on the role of Roblox as a facilitator and the role of game mechanics for incidental learning, and its impact on students' linguistic competence.

The findings showed that all three aspects were categorized as high. First, Roblox functioned as a facilitator by providing an enjoyable and low-anxiety environment, where students felt more comfortable using English. Second, game mechanics appeared to play an important role, as students needed to understand English instructions, actions, and visual elements to complete tasks in the game. Third, Roblox was associated with students' linguistic competence, especially in vocabulary, informal expressions, and communication through chat, although grammar development was less prominent.

In addition, the overall results showed that most students may have experienced positive outcomes from using Roblox, which are in line with Sundqvist & Sylvén (2016), Plass et al. (2020), and Reinhardt (2019) . The results of this study reflected similar patterns, particularly in terms of exposure, interaction, and meaningful use of language in digital contexts.

Theoretically, these findings contribute to incidental learning in digital game environments, where learners are exposed to language while focusing on meaningful activities when playing games. It also shows how elements such as interaction, multimodal input, and engagement may work together in supporting language learning. From a practical perspective, this study suggests that digital platforms such as Roblox can be used as supplementary learning tools. Students can benefit from additional exposure to English outside the classroom, especially in terms of vocabulary and communication. However, these platforms may not fully support all aspects of language learning, particularly grammar, which still requires structured instruction. From a pedagogical or policy perspective, teachers may consider integrating elements of games into their teaching practices. Schools may also consider designing and providing training for teachers to prepare them to use games in the classroom.

This study employed a questionnaire for data collection. Future researchers are encouraged to use experimental or mixed method designs to examine the effectiveness of Roblox more deeply. For example, research comparing students' performance before and after using the platform is suggested. In addition, future studies may explore other aspects such as speaking skills, motivation, or long-term learning outcomes. For teachers, it is suggested to guide students in using games like Roblox in a more focused way, so that

learning outcomes can be maximized. For students, it is important to use digital games not only for entertainment but also as an opportunity to practice and improve English skills.

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Appendix 1

Instrument (questionnaire)

No.	Indicator	Original Source / Statement (Reference)	Adapted Questionnaire Item
1	Frequency	Okumuş & Gürbüz, Survey Section: <i>"How often do you watch English TV series/films?"</i> (Contextual adaptation from general survey questions)	I always play Roblox on servers that use English language everyday at least one hour
2	Attention to Text	Okumuş & Gürbüz, Abstract/Intro: <i>"...habits of utilising subtitles and captions for... learning... through on-screen texts."</i>	I always pay attention to the English texts or instructions that appear on the screen while playing Roblox.
3	Unintentional Learning	Jenkins (1933), p. 472: <i>"...learning which occurs in the absence of a specific intent to remember..."</i>	I learned new English words in Roblox unintentionally, without planning to memorize them beforehand.
4	Focus on Meaning	Hulstijn (2012), p. 1: <i>"...focus is on meaning... to survive and win"</i> (Conceptual)	I read English texts in Roblox primarily to complete missions or win the game, not to study the language.

5	Effectiveness	Okumuş & Gürbüz, p. 25 (Item 6): <i>"Do you believe that while watching English TV series/films for enjoyment... contributes to your vocabulary knowledge?"</i>	I believe that playing Roblox is an effective and enjoyable way to improve my English vocabulary.
6	Forced Use	Jenkins (1933) / Draft Context: <i>"The activity naturally forces them to use English."</i>	The situations in the game naturally force me to use English to progress.
7	Multimodality	Gee (2013), p. 83: <i>"Words are not just text; they are connected to actions, images, and goals..."</i>	I remember English words easily because they are connected to images, actions, or specific goals in the game.
8	Situated Meaning	Gee (2013), p. 210 (Principle 20): <i>"Meaning and knowledge are built up through various modalities... not just words."</i>	I understand the meaning of verbs (like 'trade', 'build', 'jump') by directly performing the actions in the game.
9	Visual Clues	(Draft) / Gee: <i>"...specific parts... such as pictures."</i>	Visual clues (icons, symbols) in Roblox help me understand difficult English texts.
10	Retention (Memorable)	Okumuş & Gürbüz, p. 26: <i>"...make vocabulary learning more memorable."</i> (Derived from student interview themes)	The exciting experience of playing makes the English vocabulary I encounter in Roblox hard to forget.

11	Ease of Learning	Okumuş & Gürbüz, p. 25 (Item 11): <i>"I think watching... is an effective way to learn... easier."</i>	Learning English through Roblox feels easier and less boring than learning from textbooks.
12	Slang & Idioms	Okumuş & Gürbüz, p. 26 (Item 9): <i>"...helps me understand idioms, slang..."</i>	Playing Roblox helps me understand English slang and abbreviations often used by native speakers.
13	Grammar	Okumuş & Gürbüz, p. 25 (Item 7): <i>"Do you believe that... contributes to your grammar knowledge?"</i>	I started to understand correct English sentence patterns (grammar) by frequently reading dialogues or instructions in Roblox.
14	Reading Speed	(Draft - Objective 2): <i>"...reading speed..."</i>	Because the game moves fast, my speed in reading English text has improved.
15	Learning Strategy	Okumuş & Gürbüz, Appendix C: <i>"Template for wordbook... My guess / Dictionary Meaning."</i>	When I find a difficult but important word in Roblox, I use a dictionary or Google Translate to find its meaning.
16	Intercultural Contact	Thorne (2008), p. 304 (Item 1): <i>"I enjoy interacting with people from different cultures."</i>	I enjoy interacting with players from other countries in Roblox using English.
17	Writing Production	(Draft) / Thorne: <i>"Chat Box features... communicate."</i>	The chat box feature encourages me to try writing English sentences to communicate with others.

18	Low Anxiety (Anonymity)	Peterson (2013), p. 40: <i>"...risks and pressures associated with learning in the real world are greatly reduced."</i>	I am not afraid of making mistakes in English on Roblox because I use an avatar and do not meet people face-to-face.
19	Authentic Language	Okumuş & Gürbüz, Abstract: <i>"...offer multiple semiotic modes and authentic language input..."</i>	The dialogues in Roblox teach me 'authentic' (natural) English expressions that are rarely found in school books.
20	Value of Gaming	(Draft) - Conclusion: <i>"Gaming time is valuable... building skills."</i>	I realize that my time spent playing Roblox is valuable for improving my English skills.

Appendix 2

Expert Judgement Form

<i>Feedback and revision</i>		
Items	Feedback	Revision
1	Kurang spesifik untuk mengukur frekuensi. Tambahkan durasi waktu (minimal 1 jam) dan perjas bahwa server tersebut menggunakan bahasa Inggris.	I always play Roblox on servers that use English language everyday at least one hour.
2	Kata 'look at' terlalu pasif. Ganti dengan indikator atensi yang lebih kuat seperti 'pay attention' dan perjas jenis teksnya (instruksi di layar).	I always pay attention to the English texts or instructions that appear on the screen while playing Roblox.
3	Gunakan istilah akademis yang sesuai dengan teori utama kamu (Incidental Learning). Ganti 'by accident' menjadi 'unintentionally' dan beri penekanan tanpa niat menghafal.	I learned new English words in Roblox unintentionally, without planning to memorize them beforehand.

5	Ubah formatnya menjadi kalimat persepsi personal siswa ('I believe...'). Tambahkan dimensi efektivitas dan kesenangan (<i>enjoyable</i>).	I believe that playing Roblox is an effective and enjoyable way to improve my English vocabulary.
8	Item terlalu abstrak untuk anak SMA. Berikan contoh konkret kata kerja operasional yang sering ada di Roblox (seperti <i>trade</i> , <i>build</i> , <i>jump</i>).	I understand the meaning of verbs (like 'trade', 'build', 'jump') by directly performing the actions in the game.
12	Spesifikasikan jenis bahasa informalnya. Ganti menjadi 'slang and abbreviations' agar variabel kompetensi linguistiknya terukur jelas.	Playing Roblox helps me understand English slang and abbreviations often used by native speakers.

Yogyakarta,

Validator



Puji Rahayu S.Pd., M.LS.T., Ph.D.

Appendix 3

Questionnaire response

Initial Name	Classes	Answer per Questions																			
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
DTN	XI	3	4	4	3	5	5	5	5	4	5	3	3	5	5	2	5	5	3	4	5
HA	X	5	5	3	5	3	5	5	5	5	5	5	5	5	5	3	5	3	5	5	3
KDFN	X	2	4	4	5	3	3	3	4	4	3	4	2	3	2	3	3	4	4	3	3
NAA	X	5	5	5	5	3	5	5	5	4	5	5	4	4	5	4	4	5	5	3	4
MRDA	X	4	5	5	5	5	5	4	5	4	4	3	4	4	5	3	5	4	4	3	3
HSI	X	4	4	4	3	3	3	4	5	4	4	3	5	3	4	4	5	4	3	3	3
MAH	X	3	4	4	4	3	5	3	4	4	3	3	4	3	4	4	4	3	3	3	3
AAN	X	2	3	5	4	3	5	5	5	5	4	3	3	2	3	5	3	3	5	5	3
FAS	X	3	4	4	2	4	4	4	4	5	3	5	4	3	4	4	1	4	4	4	2
NA	X	3	5	4	2	5	5	5	5	4	4	4	5	4	4	5	4	5	5	4	5
NNA	X	2	2	3	4	4	4	4	4	4	3	5	5	3	3	3	5	4	5	4	3

AZ	X	5	5	4	3	5	5	4	5	5	4	4	5	5	4	5	5	5	3	5	5
RKA	X	2	4	4	4	5	5	5	5	3	3	3	4	2	4	2	3	3	4	4	3
BPJ	X	4	5	4	5	3	5	3	2	3	3	2	4	2	4	4	5	4	3	4	3
NCR	X	2	3	1	4	4	4	4	4	4	3	4	3	2	4	1	2	2	3	4	3
AMM	X	4	3	5	4	4	3	5	5	3	3	4	5	4	5	4	5	3	3	4	4
MRK	X	1	5	4	5	5	5	5	5	5	5	4	5	5	5	5	5	4	5	5	3
RS	X	3	4	4	4	5	4	5	5	5	3	4	4	3	4	5	4	4	3	5	2
ANRR	X	3	5	4	2	5	4	4	5	5	5	4	5	4	4	5	4	4	2	4	4
AA	X	4	5	5	5	5	5	5	5	4	5	4	5	4	5	3	5	5	4	5	5
MHH	X	5	5	5	5	4	5	5	5	4	4	4	5	5	5	5	5	5	5	5	4
MHFH	X	4	4	4	3	4	3	4	4	5	4	4	5	4	4	3	4	4	2	4	4
AS	X	4	4	4	3	4	4	5	5	5	5	5	5	5	5	5	5	5	5	3	5
HA	X	5	5	3	5	5	4	5	5	5	4	5	5	2	5	5	5	5	5	5	3
BBA	X	2	4	3	5	3	5	3	5	3	3	4	4	2	3	4	4	4	4	4	3
ABM	X	5	5	5	5	5	5	5	5	5	5	5	5	5	5	1	5	5	5	5	5
ALW	X	2	4	4	4	4	4	4	5	4	4	4	4	4	5	5	5	4	4	4	4

AVK	X	1	3	3	4	3	3	2	4	4	2	3	3	2	4	2	1	2	4	3	2
KHPA	X	1	4	5	5	3	4	5	5	5	3	5	5	3	5	5	2	2	5	5	4
RSR	X	2	5	4	4	3	3	4	5	3	3	3	3	2	2	4	2	3	4	3	2
JHAF	X	2	2	2	2	3	3	3	3	3	3	3	3	3	2	2	2	2	3	3	3
FCN	X	4	5	3	5	5	5	2	5	3	3	3	4	4	4	1	5	4	2	4	3
KDFN	X	3	4	5	5	3	4	3	5	5	3	3	2	2	3	3	3	5	1	2	2
NAA	X	4	5	4	5	5	4	4	5	5	4	5	5	4	4	3	4	3	4	4	4
ASST	X	4	5	4	4	4	5	5	5	5	5	5	5	3	4	5	5	5	5	4	5
M	X	2	4	4	4	4	5	3	5	5	3	5	4	5	3	5	3	3	5	5	4
RAHS	X	2	4	4	3	3	3	4	4	4	3	3	4	3	3	3	3	3	4	4	1
NMT	X	5	5	3	5	5	5	2	5	5	4	1	5	4	5	5	5	4	4	5	5
KZO	X	3	5	3	2	5	5	4	5	4	3	5	4	3	3	4	4	4	4	4	4
NAZH	X	1	1	3	5	3	2	4	5	5	4	5	5	5	4	2	3	1	5	4	4
YAP	X	4	3	4	4	4	4	3	4	4	4	4	3	4	4	4	3	4	4	3	4
RE	X	5	4	5	5	5	5	5	5	4	3	5	5	2	5	5	5	5	5	5	4
NAB	XI	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

A	XI	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
DG	XI	5	5	5	5	5	5	5	5	5	3	5	5	4	5	5	5	5	5	5	5
RFLM	XI	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
SK	XI	5	4	4	5	4	4	5	4	5	4	3	4	3	3	4	4	4	4	5	5
C	XI	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
NA	XI	4	5	5	5	5	5	5	5	5	5	2	5	5	5	1	5	5	5	5	5
IA	XI	1	3	4	5	4	4	4	4	5	4	4	4	3	4	4	4	4	4	4	4
T	XI	1	1	1	1	1	1	5	1	5	3	5	5	5	5	5	5	5	5	1	1
CFTB	XI	5	5	4	4	3	3	4	4	4	3	3	3	3	3	5	4	4	4	3	3
RA	XI	3	4	4	4	4	4	4	4	4	4	4	3	4	3	4	4	4	3	4	3
NCA	XI	4	4	5	5	4	3	4	5	4	4	5	4	2	3	4	4	4	4	4	5
NIAG	XI	3	3	5	5	5	5	5	4	4	4	5	4	4	4	5	4	2	3	5	5
RM	XI	5	4	4	4	5	5	5	5	4	4	5	4	4	5	5	5	5	4	4	5
DF	XI	5	5	5	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4
RRMS	XI	1	2	4	3	3	3	3	4	5	3	5	3	4	3	3	4	4	5	4	3
RCPA	XI	4	5	4	5	5	3	5	5	5	5	5	5	5	5	5	5	5	5	4	5

AWA	XI	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
AWS	XI	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3	4
SMK	XI	4	4	4	4	4	4	4	4	4	4	5	4	4	4	4	4	4	4	4	4
ASN	XI	4	4	4	2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
RYN	XI	1	2	2	5	5	2	5	5	4	5	4	3	4	3	2	4	5	4	4	4
EAZ	XI	4	5	5	5	5	5	5	5	5	5	5	5	4	5	3	5	5	5	5	5
BJJ	XI	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
D	XI	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
CNS	XI	3	3	4	5	4	3	4	5	3	2	3	5	4	4	4	5	5	3	3	3
BCL	XI	5	5	5	5	3	4	4	3	2	3	5	3	3	3	4	2	2	3	3	4
R	XI	5	2	5	5	5	5	5	5	5	5	5	5	3	5	2	5	5	5	5	5
L	XI	2	5	4	4	4	4	4	4	4	4	4	5	2	4	4	4	4	3	3	3
GNJVK	XI	4	5	4	5	5	4	5	5	4	4	5	4	5	5	5	5	5	5	5	5
FTHNZ R	XI	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	4	4	4	4	4
IN	XI	1	5	4	5	4	3	5	5	5	4	4	5	3	5	5	4	5	3	5	1

RNSR	XI	3	5	5	5	4	3	4	5	4	4	5	3	2	4	3	1	2	3	4	1
ADA	XI	2	4	4	5	5	4	5	4	4	5	5	4	4	4	5	4	3	4	4	5
HR	XI	2	4	5	5	4	5	5	5	5	3	5	5	4	3	1	5	5	5	5	5
AYLK	XI	5	5	5	5	5	5	4	5	5	4	5	5	3	3	1	5	5	5	5	5
SAJ	XI	3	4	4	5	5	5	3	4	5	4	5	5	4	4	5	4	5	5	5	4
RPM	XI	2	5	5	5	5	5	5	5	5	5	5	4	4	4	5	3	3	4	3	5
ESH	XI	2	5	4	4	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
RAN	XI	2	4	4	4	4	4	4	4	4	4	5	4	4	4	4	4	4	4	4	4
R	XI	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
PSA	XI	1	5	4	4	4	4	4	4	4	4	3	3	2	4	5	5	5	5	5	5
MZH	XI	2	5	4	3	5	5	4	5	5	5	4	5	5	5	2	5	5	5	5	2
RY	XI	2	3	3	4	3	2	2	4	4	3	3	3	3	2	3	2	4	2	3	3
MLM	XI	2	2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
ASL	XI	2	4	4	4	5	5	4	5	5	4	5	5	3	3	5	5	4	5	5	5
AZP	XI	5	4	3	2	3	4	3	1	2	3	3	3	4	3	2	4	3	2	3	3
NARH	XI	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

BG	XI	5	5	5	4	5	5	5	5	3	5	5	5	4	5	3	5	5	5	5	3
AT	XI	2	5	4	5	5	5	4	5	2	2	5	5	2	5	2	5	2	2	5	3
AFA	XI	3	3	3	3	5	5	5	5	5	5	5	5	5	5	5	4	4	4	5	5
RDPN	XI	4	5	5	4	5	4	4	5	4	4	5	5	2	3	4	5	4	5	5	5
ANS	XI	5	5	3	3	5	4	4	5	5	4	5	5	5	5	5	4	4	4	4	5
DPDCA	XI	4	4	5	4	4	4	4	4	4	3	5	3	3	4	5	4	4	4	4	4
A	X	5	5	5	5	5	5	5	5	4	5	5	5	5	5	5	5	5	5	4	4
SLKH	X	1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
DPS	X	4	4	5	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
WRS	X	5	5	5	5	5	5	4	5	4	4	5	5	4	4	5	4	3	3	4	4
MFRAP	X	4	4	5	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
LBH	X	4	3	5	2	5	5	5	5	5	5	5	5	5	5	4	5	5	5	5	5
ARS	X	4	3	3	5	4	4	3	3	4	4	4	4	4	4	5	4	4	4	4	4
SEL	X	3	4	4	3	4	5	4	4	5	4	4	4	4	4	5	4	5	4	4	4
DFA	X	3	4	3	2	4	5	3	5	5	4	5	4	3	4	2	4	5	5	4	4
MAAF	X	3	4	5	4	5	3	4	5	4	3	4	4	4	4	5	5	5	4	4	3

RBD	X	2	5	5	5	1	4	5	1	2	5	5	5	5	3	5	5	5	5	5	4
KSN	X	1	5	4	4	4	4	5	5	5	5	5	4	2	2	4	4	4	3	4	4
FTW	XI	5	5	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
MNA	XI	3	4	4	5	4	4	5	4	4	3	5	4	2	3	5	3	4	2	4	5
ELK	XI	1	4	4	4	4	5	5	5	5	5	5	5	5	5	3	5	5	4	5	5
FAZ	XI	1	4	2	4	3	3	4	5	3	3	3	4	3	2	4	3	4	5	4	3
DPI	XI	1	5	4	5	1	5	5	5	5	4	5	1	1	4	1	1	1	1	5	4
ASAS	XI	4	4	4	3	4	5	4	4	4	4	3	4	4	4	3	4	5	4	4	4
RAPPA	XI	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
DSARB	XI	5	4	5	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
AMKF	XI	3	4	2	3	3	4	4	4	4	3	3	3	2	3	3	4	4	4	3	3
AHZ	XI	3	5	4	4	5	4	5	3	5	4	5	5	3	4	3	5	5	5	5	4
FIN	XI	3	3	4	4	5	5	5	5	5	5	5	5	5	5	5	3	3	5	5	5
KYW	XI	5	5	5	5	5	5	5	5	5	5	5	5	1	5	1	5	5	5	5	5