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Analysis of Numberblocks Youtube Videos on Children's Acquisition of Numbers

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A B S T R A C T

The aim of this study was to analzye the contents Youtube videos called Numberblocks on children's acquisition of numbers. Numberblocks videos have the highest scores on the content analysis which are the accuracy, age-appropriateness, engagement, and repetition (score = 5) with the lowest scores on pedagogical approaches: real-world connections (score = 3) and interactivity (score = 1). The average score of the linguistic analysis is 4.15 with the lowest score on the language clarity especially on the pace of speech. Numberblocks videos have the perfect average score 5 on the presentation analysis. And in the visual analysis, numbers are mostly represented in various ways (score = 4,5) but real-world examples are rarely used to illustrate number concepts (score = 2,5). It can be concluded that Numberblocks videos are successful to drag young learners' concept of numbers into the blocks and this helps their acquisition with numbers. However, parents' guidance is needed so that young learners will have more interaction and correlate the idea into real world situations and examples.

A B S T R A K

Penelitian ini bertujuan untuk menganalisis konten video YouTube Numberblocks terhadap pemerolehan angka oleh anak-anak. Video Numberblocks memiliki skor tertinggi pada analisis konten, yaitu akurasi, kesesuaian usia, keterlibatan, dan pengulangan (skor = 5), dengan skor terendah pada pendekatan pedagogis: koneksi dunia nyata (skor = 3) dan interaktivitas (skor = 1). Skor rata-rata analisis linguistik adalah 4,15, dengan skor terendah pada kejelasan bahasa, terutama pada kecepatan bicara. Video Numberblocks memiliki skor rata-rata sempurna, yaitu 5, pada analisis presentasi. Dalam analisis visual, angka sebagian besar direpresentasikan dengan berbagai cara (skor = 4,5), tetapi contoh dunia nyata jarang digunakan untuk mengilustrasikan konsep angka (skor = 2,5). Dapat disimpulkan bahwa video Numberblocks berhasil menarik konsep angka anak-anak ke dalam blok dan ini membantu pemerolehan angka mereka. Namun, bimbingan orang tua diperlukan agar anak-anak lebih banyak berinteraksi dan menghubungkan ide tersebut ke dalam situasi dan contoh dunia nyata.

INTRODUCTION

One surprising moment happened when my 5-year-old son sang "one four is four, two fours are eight, three fours are twelve, four fours are sixteen …". I asked him then, "Kakak tahu lagu itu dari mana? (How did you know the song? Where was it from)". Then he answered "Numberblocks itu (It's Numberblocks)". Numberblocks is one video that is accessed through the YouTube Kids. My son sometimes gets the opportunity to go to the YouTube Kids before going to bed after drinking some milk. YouTube Kids provides some menu such as "the parents' password" and "the timer" which help me as the parents to control the video watching. I usually set the timer: 4 minutes and he got the chance to play it three times. I always remind him for the last 4 minutes so that he won't ask for more videos.

I personally choose YouTube Kids since my son sometimes complains on why I and his father often use the phone. He demands to use the phone as well and I give him the opportunity to check on the YouTube Kids. Besides "the parents' password" and "the timer", parents also have the access to "block the videos" that are not suitable for his age. There is no comment section so that my son will not read inappropriate comments and there will be no ads as well so it will be safer for my son compared to the regular YouTube.

YouTube Kids offers some videos and my son picks some to play. I realized that there are many kinds of videos starting from recommendation videos, music videos, shows, and studying. YouTube Kids also provides the re-watch and explores more videos. When I take a look at the recommendation videos, it offers a lot of videos from Numberblocks. As my son spends a lot of time watching the Numberblocks videos, the recommendation will be videos from Numberblocks or videos related to the numbers and counting.

Kids nowadays live in the digital era. Kids are the digital native as they are exposed sophisticated technical skills to recognize the functions of certain menus on the screen of the tablet or mobile-phone (Helsper & Eynon, 2010). They have been immersed in technology all their lives and thus change the learning preference, not the traditional education but the modern education where kids learn easily through the screen such as videos from their mobile-phone. This imply that the nature of learning is different from students in the past as they must sit and listen to the teacher in a traditional set of a classroom.

Numberblocks is an animated television series which was debuted on 23rd of January 2017 in England for preschoolers. It was created by Joe Elliot and produced by Alphablocks Ltd with Blue Zoo. The characters in the series are in the form of blocks characters which represent the numbers, for example one block to represent

number 1, two blocks to represent number 2, etc. The YouTube channel Numberblocks was made on April 28, 2018 (https://www.youtube.com/@Numberblocks). It has 2050 videos and has been watched for 9.243.921.510 times in December 2024.

YouTube videos are often used in the classroom, especially in the language classroom. Video can be a powerful tool for language learning, providing rich input and engaging children through visual and auditory stimuli. One major benefit of YouTube is that it offers free online access to short videos covering various school topics. Teachers can easily find and check videos related to certain lessons, then share the links with their students (Chtouki et al, 2012). Thus, the use of YouTube videos nowadays in the classroom has become a part of the teaching and learning process and the students are familiar and get used to learn from the YouTube videos as well.

Previous studies related to the use of YouTube videos in Indonesia have been conducted by Hamzah, A (2017), Sari, R. D. (2018), and Wulandari, S. (2019). The study focused on the effectiveness of using YouTube videos in English classrooms in relation with the vocabulary mastery and accuracy in speaking skills. Wulandari, S. (2019) focused on the students' motivation and engagement and the result indicated that students are motivated and engaged more as they watch the YouTube videos. Some previous studies related to the use of videos to improve children's acquisition on numbers have also been done by some reserachers. Those are:

1. A study by Clements & Sarama (2009) to explore the development of early mathematical concepts in young children. It found that the use of interactive multimedia, including videos, can effectively support children's learning of early math concepts, such as number recognition and counting.
2. A study by Bedard & Leclercq (2012) to investigate the effectiveness of interactive multimedia, including videos, on young children's mathematical learning outcomes. It concluded that interactive multimedia, when designed effectively, can significantly enhance children's learning of mathematical concepts, including number sense.
3. A study by Singer, D. G., & Singer, J. L. (2016) to provide a comprehensive overview of research on children's media use. It explored the potential of educational videos to support children's learning in various domains, including mathematics, highlighting the importance of age-appropriate content and active engagement.

Those previous studies implied the use of videos to support students' understanding about numbers. Unfortunately, there was one study only on the use of Numberblocks videos in the classroom in Indonesia which was conducted by Nurul Hidayah and Intan Prastihastari Wijaya in 2023. They focused on the P*ENGGUNAAN*

MEDIA NUMBERBLOCKS UNTUK MENINGKATKAN KEMAMPUAN BERHITUNG PADA ANAK USIA 4-5 TAHUN TK IT AL AQSHA or The use of Numberblocks as a Media to Improve 4 to 5 Year Old Students' Numeracy Skills in TK IT Al Aqsha. This study was a Classroom Action Research, conducted in Kediri – East Java, Indonesia with the research subjects the kindergarten students of TK IT Al-Aqsha. The results of this study was namely that 88.71% were declared complete and the percentage of children who had not completed was only 14.2%. It can be concluded that the implementation of research using Numberblocks media can improve the numeracy skills of students aged 4-5 years old in TK IT Al Aqsha.

As the previous study focused on the improvement of the numeracy skills, it is important to dig deeper on why Numberblocks videos are successful to improve students' language aspects integrated within the videos. Thus, it is necessary to analyze the Numberblocks videos further to identify how they can also serve as learning media for both English lessons and numbers. By exploring the content, linguistic, presentation and visual analysis on the videos, this study aims to support previous findings and broaden the understanding of the Numberblocks videos as a potential educational resource in early childhood education.

LITERATURE REVIEW

Second Language Acquisition

As the children start to utter a word, it is a process for the children to acquire the language or in this case, it is called the language acquisition. This is a naturel process as it develops in line with the children's age. Children start to utter the words they listen to and combine words into sentences at the age of three. Children do not only acquire one language or their mother tongue. Most of the time, they also acquire the second language which is called second language acquisition (SLA). SLA is the second language that is acquired by the children as they have mastered their first language. SLA differs from the first language acquisition. On the first language acquisition, the habits or the environment where the first language is spoken plays an important role. For the SLA, it focuses on how indivisuals or groups are able to acquire the second language though they are still active in using their first language. (Farahsani, Rini, & Jaya, 2020).

There are two types of SLA (stated by many experts), which are the informal learning or learn subconsciously and formal learning or learnconsciously (Krashen, 1981). The process to acquire the first and the second language is different. Children are able to master the first language sucessfilly as they are exposed to the knowledge of their surroundings and are also exposed to the language over and over (Ellis, 2004).

SLA is different since the children have already got the background knowledge on how the language is formed and the children have already got the pre-existing conceptual knowledge (Ellis, 2004). Furthermore, first language acquisition and second language acquisition differs on the language input and the transfer (Farahsani, Rini, & Jaya, 2020).

VanPatten (2004) stated that input plays a great role for the acquisition as it represents the mental development. Somehow, Gass (2004) mentioned that the children are unable to comprehend an information when there is no interaction in the process. The interaction will link children's information on the use of the grammar, especially on the second language. In conclusion, there should be a balance on the input and the output (interaction) in the second language learning.

Youtube Video Analysis

YouTube becomes new evidence of the media evolution. YouTube or the site www.youtube.com was founded in Silicon Valley (Alexa, 2021). By 2021, the site has been a platform for more than five billion videos and on every minute, more than 500 hours of video content was uploaded (Press, 2021). In the beginning, YouTube was mostly for the amateur who would like to share their videos. But, in October 2006 as it was acquired by Google, it provides a wide variety of content with so many platform channels. The platform then becomes a second-largest search engine as people are able to search a lot of information related to the videos on this site (Smith, 2020).

YouTube then becomes so popular since it has more users and the channels also include the learning resources in the learning system (Tohari and Bachri, 2019). Many educators then upload the learning resources on the site and in the process, many educators use the Youtube Videos for the learning media.

Youtube Videos for the learning media are possible if they meet several criteria (Cahyana and Kosasih, 2020). The criteria should be from several indicators which include the content, linguistic, presentation, and visual elements (Widiastuti and Hidayati, 2023).

Video Affecting Children's Acquisition of Numbers

Video plays a great role to help children's acquisition. Shahrokni (2009) mentioned that better vocabulary learning and acquisition happens incidentally as children are exposed to the combination of text and images in the video. The research by J. W. DeHaan (2005) and Vahdat & Behbahani (2013) indicated that continuous input as the repetition od words, phrases, and sentences shown in the video played a great role for the children's language acquisition. It is really important for the language learners to be exposed to the repetitions as they may graps what is being said and what is done by others when the production of the language occurs (Silva & Santos, 2006).

A study by Ghazi-Saidi & Ansaldo (2017) also revealed that the increase of exposure to the stimulus, in this case the vocabulary acquisition, creates faster and more accurate word processing. Therefore, it is significant and important to make the learners to be familiar with the target language from the repetition process. As for the acquisition of vocabularies related to numbers, children's repetition and the combination of text and images are needed. Mathematics is a science of numbers created from human thinking related to processes, ideas, and reasoning. Mathematics is also a series of methods for drawing conclusions and communicating ideas with ideas (Hidayati, 2012).

METHODS

The aim of this study was to analyze the contents of YouTube videos called Numberblocks in relation to children's acquisition of numbers. A qualitative content analysis design was used, as it aimed to explore and interpret the meanings, representations, and pedagogical features embedded within the videos rather than to measure numerical outcomes. The study focused on the Numberblocks videos available on YouTube and examined them through four aspects of analysis: content, linguistic, presentation, and visual analysis.

The analytical framework was adapted from Widiastuti and Hidayati (2023), who conducted a study on YouTube-based learning videos about volume building materials. In this research, the content analysis covered mathematical concepts (accuracy, completeness, depth, and age-appropriateness) and pedagogical approaches (engagement, interactivity, repetition, and real-world connections). The linguistic analysis focused on language clarity (vocabulary, grammar, and pace of speech) and narrative structure (storytelling and character development). The presentation analysis examined visual appeal (animation quality and graphics) and audio quality (sound effects and music). Lastly, the visual analysis explored the use of visual cues (number representations and real-world examples).

To support the qualitative interpretation, a five-point Likert scale (5 = very good, 4 = good, 3 = fair, 2 = poor, 1 = very poor) was used to provide a descriptive rating of each criterion. This scale served to strengthen the qualitative findings by quantifying the evaluators' perceptions and facilitating clearer comparisons across the analyzed aspects.

The coding process and analytical categories were adapted from the framework used in the previous study to maintain consistency and validity. To ensure reliability, the researcher conducted inter-rater reliability checks by involving another evaluator familiar with educational video analysis. Both raters analyzed the same video samples independently, and the results were compared and discussed to reach agreement. Any

differences were resolved through discussion and refinement of the coding scheme to enhance the credibility and dependability of the findings.

The videos analyzed (a simple random sampling) were taken from the Numberblocks YouTube channel https://www.youtube.com/@Numberblocks. Two videos from Level 1 (the introduction of number 1 up to 5, simple addition, simple subtraction, and simple recognition of numbers), Level 2 (the introduction of number 1 up to 10, the introduction of odd numbers, even numbers, number patterns, and more), Level 3 (the introduction of higher numbers – more than 10, the introduction of multiplication, division, factors, and more), and Math Songs were picked. The list of the videos are:

1. Level 1 (Red) Full Episodes 19&20
   https://www.youtube.com/watch?v=7MYnKSfyUqU
2. Multiplication for Kids Level 1
   https://www.youtube.com/watch?v=pevLVn_mfPE
3. Orange Level 2 Full Episodes 29-30
   https://www.youtube.com/watch?v=f9Zd-3VxR4g
4. Orange Level 2 Full Episodes 17-19
   https://www.youtube.com/watch?v=BXDJAw7_FPM
5. Level Three All the Best Nineteen Moments
   https://www.youtube.com/watch?v=Z3-AtBP0YhY
6. Level Three All the Best Sixteen Moments
   https://www.youtube.com/watch?v=ns1tZQQaXg4
7. Sing-along Numberblocks Songs Four on the Dance Floor
   https://www.youtube.com/watch?v=1Kc9D4b8NFg
8. Sing-along Numberblocks Learn to Count Songs Two Times Table
   https://www.youtube.com/watch?v=PGHjzT4X080

RESULT AND DISCUSSION

Content Analysis

Table 1 represents the average scores of the indicators in content analysis from the eight Numberblocks videos. The highest scores are on accuracy, age-appropriateness, engagement, and repetition (score = 5). As Numberblocks are designed to help young learners understand the basic concept of counting, repetition

plays a major role in their learning process. Repetition provides consistent exposure, allowing learners to gradually internalize and retain new information. According to Nation (2013), repetition is essential for assisting L2 learners in gaining a deeper understanding of both receptive and productive knowledge—specifically form, meaning, and usage—of the target vocabulary. Similarly, Nagy and Townsend (2012) emphasize that repetition strengthens memory consolidation, making newly acquired knowledge more stable and accessible.

When young learners watch Numberblocks videos, they are repeatedly exposed to key vocabulary and numerical concepts. The recurring use of words such as "one," "two," "add," and "plus" allows them to associate linguistic expressions with mathematical ideas. Over time, these repeated patterns help them connect abstract symbols (numbers) with concrete representations (characters and actions), thereby enhancing both their language and numeracy development. For example, in the first video, Level 1 (Red) in Episode 19 (Figure 1), the concept of numbers 1, 2, and 3, along with simple addition, is reiterated several times to reinforce learners' comprehension and facilitate acquisition. This repetition not only aids memory retention but also promotes automaticity—an essential skill in early numeracy and language learning.

However, it is also important to notice the lowest scores on pedagogical approaches: real-world connections (score = 3) and interactivity (score = 1). While Numberblocks effectively introduces mathematical ideas through appealing animations, it tends to focus more on conceptual demonstration rather than real-life application. Mathematics learning is ideally contextualized, allowing children to see how numbers function in daily experiences such as sharing toys, counting fruits, or organizing objects. Without explicit real-world connections, learners may perceive numbers as isolated concepts rather than tools for everyday problem-solving.

In addition, the low interactivity score indicates limited opportunities for active learner participation. Since the videos present the answers directly, children passively receive information rather than engaging in prediction or discovery. Interactive features—such as pauses for guessing, guiding questions, or prompts for physical response—could enhance cognitive engagement and encourage active meaning-making. For instance, in Figure 2, from the second video *Multiplication for Kids Level 1*, the concept of multiplication is visually executed well, but learners might struggle to relate it to familiar contexts, such as grouping objects in their surroundings. In this case, parental or teacher mediation becomes crucial to bridge the connection between the visual content and children's real-life experiences.

Therefore, while Numberblocks excels in delivering accurate, engaging, and developmentally appropriate representations of numbers through repetition, it would

benefit from more interactive and context-based elements to maximize its pedagogical potential. Combining guided adult interaction with video-based learning could create a more holistic learning experience that supports both conceptual understanding and real-world application.

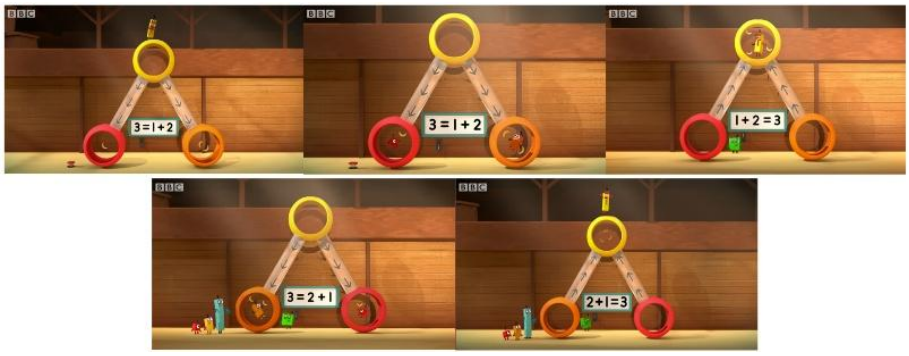

Figure 1. The repetition of number 1, 2, and 3 on the first video

Table 1. Scores of the Indicators in Content Analysis

No	Indicator	Average Score	Information
1	Mathematical concept - accuracy	5	The mathematical concepts are presented accurately and consistently
2	Mathematical concept - completeness	4,75	The video mostly covers counting, number sense, and operations
3	Mathematical concept - depth	4,5	the video mostly go beyond basic counting and explore more complex concepts like place value, fractions, and patterns
4	Mathematical concept - age-appropriateness	5	The concepts presented are at a level suitable for the target age group
5	Pedagogical approach - engagement	5	The video effectively engages children's attention and maintains interest
6	Pedagogical approach - interactivity	1	The video doesn't encourage active participation from viewers (e.g., pausing, repeating, answering questions)
7	Pedagogical approach - repetition	5	Key concepts are repeated to reinforce learning
8	Pedagogical approach - real-world connections	3	The video needs to connect more number concepts to real-world situations and experiences

Figure 2. The absence of real-world connections on the second video

Linguistic Analysis

Table 2 presents the average scores of the indicators in the linguistic analysis from the eight Numberblocks videos. The highest score is found in the narrative structure, particularly in the character development aspect. The Numberblocks series effectively transforms abstract numerical symbols into animated characters with distinct personalities, making mathematical concepts more concrete and relatable for young viewers. Each number is visually represented according to its quantity—*Number 1* is shown as one block, *Number 2* as two blocks, *Number 3* as three blocks, and so forth. This consistent visual-narrative alignment helps children recognize numerical values as meaningful entities rather than arbitrary figures.

The videos also employ engaging storytelling techniques that integrate mathematical reasoning into the characters' actions. For example, the concept of *six* is presented through different visual formations—such as a 2 × 3 arrangement or a staircase shape (1 + 2 + 3)—yet all representations reinforce the understanding that they share the same total number of blocks (see Figure 3). This visual narrative allows children to internalize the principle of numerical equivalence across different spatial forms, supporting their early logical thinking and cognitive flexibility. As Bruner (1986) suggests, narrative thinking plays a key role in helping children make sense of abstract concepts through meaningful stories and familiar patterns.

However, the language clarity aspect received relatively lower scores. Although the narration is lively and contextually appropriate, some of the vocabulary and the pace of speech can be challenging for young English as a Foreign Language (EFL) learners. For instance, in the third video (Check on the transcript of the third video on the minutes 5.09 to 7.50 after the Reference), between minutes 5.09 and 7.50, the dialogue includes mathematical terms and fast-paced expressions that may exceed the comprehension level of beginning EFL learners. Without sufficient scaffolding, such language complexity could limit learners' ability to fully grasp the intended meaning.

Therefore, parental or teacher guidance becomes essential to bridge this gap. Adults can provide translation, rephrasing, or contextual explanations to help children

process unfamiliar vocabulary and maintain comprehension. Guided interaction during or after video viewing—such as pausing to discuss key terms or asking comprehension questions—can further reinforce language learning and support bilingual development.

Overall, while Numberblocks demonstrates strong narrative and visual-linguistic integration that effectively links numbers with character identity, attention to language clarity and pacing is necessary when the videos are used with EFL learners. With proper mediation, these videos can serve not only as engaging tools for numeracy development but also as valuable resources for early English language exposure.

Table 2. Scores of the Indicators in Linguistic Analysis

No	Indicator	Average Score	Information
1	Language clarity - vocabulary	4	The language used is mostly clear, concise, and appropriate for the target age group esp for ESL but quite difficult for EFL
2	Language clarity - grammar	4,125	The grammar is correct and mostly easy to understand
3	Language clarity - pace of speech	3,25	The pace of speech is slightly appropriate for children's listening comprehension, esp ESL - EFL may find it too difficult
4	Narrative structure - storytelling	4,375	The video uses engaging storytelling techniques to present mathematical concepts
5	Narrative structure - character development	5	The characters are relatable and engaging for children

Figure 3. The character development of number 6 narrated in a story

Presentation Analysis

Table 3 presents the average scores of the indicators in the presentation analysis. Each indicator received an average score of 5, indicating that the Numberblocks videos demonstrate strong quality in terms of presentation aspects. The high scores reflect the videos' excellence in both visual and audio design, which play

a crucial role in sustaining young learners' attention and supporting comprehension.

The animation quality and graphics are visually appealing, colorful, and age-appropriate, allowing children to easily associate numbers with their corresponding visual forms. The smooth transitions, character movements, and consistent color coding help children recognize numerical sequences and relationships more intuitively. In addition, the audio elements, including background music, sound effects, and clear voice narration, contribute to an engaging and multisensory learning experience.

As Mayer's (2009) *multimedia learning theory* suggests, combining visual and auditory modes can enhance understanding by helping learners process information through dual channels. The well-balanced use of visuals and sounds in Numberblocks supports this principle, making abstract numerical ideas more concrete and memorable for young audiences. Consequently, the overall presentation quality strengthens both the instructional effectiveness and entertainment value of the videos.

Table 3. Scores of the Indicators in Presentation Analysis

No	Indicator	Average Score	Information
1	Visual appeal - animation quality	5	The animation is visually appealing and engaging
2	Visual appeal - graphics	5	The colors and graphics are vibrant, age-appropriate, and visually stimulating
3	Audio quality - sound effects	5	The sound effects are appropriate and enhance the learning experience
4	Audio quality - music	5	The background music is engaging, age-appropriate, and not overly distracting

Visual Analysis

Table 4 presents the average scores of the indicators in the visual analysis. The results show that numbers are represented in various and creative ways, with an average score of 4.5, indicating strong visual representation of numerical concepts. The *Numberblocks* series successfully visualizes numbers through different spatial forms, colors, and character designs, allowing children to perceive quantity and numerical relationships more concretely. These multiple visual representations help young learners recognize that numbers can exist in different arrangements while maintaining the same value, thereby reinforcing their conceptual understanding of equivalence and composition.

However, the use of real-world examples received a relatively lower score (average = 2.5). While the videos effectively present abstract mathematical ideas, they

seldom connect these ideas to everyday contexts or authentic situations that children might encounter. Real-world visualizations—such as counting toys, fruits, or classroom objects—could help learners apply their understanding beyond the animated environment. According to Clements and Sarama (2009), connecting mathematical ideas to meaningful, real-world experiences enhances children's ability to construct lasting conceptual knowledge and supports the transfer of learning from symbolic to practical contexts. Therefore, integrating more relatable visual examples would strengthen the connection between symbolic learning and real-life numeracy experiences.

Table 4. Scores of the Indicators in visual Analysis

No	Indicator	Average Score	Information
1	Visual Cues - number representations	4,5	Numbers are mostly represented in various ways (e.g., numerals, objects, manipulatives, abstract symbols)
2	Visual Cues - real world examples	2,5	Real-world examples are rarely used to illustrate number concepts

Numberblocks Youtube Videos and Chilren Acquisition's of Numbers

According to Krashen (1981), there are two main types of second language acquisition (SLA): informal or subconscious learning, and formal or conscious learning. Informal learning occurs naturally through exposure and communication without explicit instruction, while formal learning involves deliberate attention to linguistic forms, such as grammar or vocabulary. The processes underlying first and second language acquisition differ considerably in both cognitive and environmental aspects. As Ellis (2004) explains, children acquire their first language successfully because they are continuously exposed to it in meaningful, communicative contexts. Through repeated interactions with their surroundings, they subconsciously internalize linguistic structures and develop intuitive grammatical competence.

In contrast, SLA involves learners who already possess linguistic and conceptual knowledge from their first language. This pre-existing framework influences how they process and interpret new linguistic input in the second language (Ellis, 2004). Consequently, SLA requires learners not only to receive adequate input but also to actively engage in interaction and output production to test and refine their understanding. Farahsani, Rini, and Jaya (2020) further emphasize that first and second language acquisition differ in terms of both the quality of input and the transfer of linguistic features from the first language.

VanPatten (2004) argues that comprehensible input is fundamental to

acquisition because it activates the learner's internal processing system and facilitates mental representation of the target language. However, as Gass (2004) highlights, input alone is insufficient without interaction. Interaction allows learners to negotiate meaning, receive feedback, and adjust their linguistic output. This two-way process strengthens grammatical awareness and supports deeper comprehension. Thus, a balanced integration of input and interaction is essential in successful second language learning.

Within this framework, the Numberblocks YouTube videos serve as an engaging form of comprehensible input for early learners. The series provides repeated exposure to vocabulary related to numbers through visually rich animations and rhythmic songs. As numbers are presented through both visual cues (blocks) and linguistic forms (spoken words), children can link new L2 vocabulary to their existing L1 conceptual knowledge. For instance, when the video introduces "three" through the image of three connected blocks, learners may associate it with their L1 equivalent "*tiga*", reinforcing cross-linguistic mapping and semantic understanding.

The repetitive nature of the videos strengthens vocabulary retention by allowing multiple encounters with the same lexical items, aligning with Nation's (2013) principle that repetition enhances both receptive and productive knowledge. However, despite their value as input-rich resources, the videos provide limited opportunities for interaction or output. Because they are one-way media, learners cannot test their understanding, negotiate meaning, or receive corrective feedback—all of which are crucial for internalizing language forms. Therefore, while Numberblocks offers valuable input for early SLA, it should ideally be complemented by interactive activities guided by parents or teachers to help learners process, practice, and verify their comprehension.

CONCLUSION

Numberblocks videos have the highest scores on the content analysis which are the accuracy, age-appropriateness, engagement, and repetition (score = 5) with the lowest scores on pedagogical approaches: real-world connections (score = 3) and interactivity (score = 1). The average score of the linguistic analysis is 4.15 with the lowest score on the language clarity especially on the pace of speech. Numberblocks videos have the perfect average score 5 on the presentation analysis. And in the visual analysis, numbers are mostly represented in various ways (score = 4,5) but real-world examples are rarely used to illustrate number concepts (score = 2,5).

Numberblocks videos are successful to drag young learners' concept of numbers into the blocks and this helps their acquisition with numbers. However,

parents' guidance is needed so that young learners will have more interaction and correlate the idea into real world situations and examples. In conclusion, Numberblocks effectively supports the input dimension of second language acquisition through repetition, multimodal representation, and visual association. Yet, to fully optimize its educational potential, it needs to be integrated with interactive and communicative tasks that balance input and output, fostering both comprehension and active language use.

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Transcript of the third video https://www.youtube.com/watch?v=f9Zd-3VxR4g on the minutes 5.09 to 7.50

5.09
let's look for Clues
5.13
did you notice anything strange or
5.15
unusual when you got back oh no nothing
5.20
oh there was one thing
5.23
suspicious shadowy Stranger in a coat
5.26
and hat pushed past me and ran out of
5.28
that door
5.30
but apart from that nothing
5.32
can you describe this stranger they were
5.35
as wide as the door so two blocks wide
5.38
with a flat head clue one flat head when
5.43
standing two blocks wide anything else I
5.46
could see over the head when we were
5.48
both two blocks wide so they must have
5.50
been smaller than me clue two smaller
5.54
than nine look at coat it's them
5.59
after them quick
6.01
[Music]
6.06
oh there on the steps
6.10
the Hat
6.13
these aren't steps
6.15
[Music]
6.24
did either of you see a suspicious
6.26
step-shaped figure in a coat and hat
6.28
sorry friend no one else down here just
6.32
us
6.33
this thing didn't add up or did it
6.40
look at what we know clue one
6.44
the suspect had a flat head when
6.47
standing two blocks wide
6.49
so it can't have been three five seven
6.53
or nine and it wasn't you because you
6.56
can't stand two blocks wide ah two four
7.00
six eight ten the suspect must be an
7.03
even number Bingo and remember clue two
7.06
the suspect was smaller than nine so it
7.09
can't have been ten that still leaves
7.13
two four six and eight but which was it
7.16
huh
7.20
there's one more clue we nearly forgot
7.24
[Music]
7.28
the suspect can make a step shape not
7.31
two or four or eight
7.36
so it must have been six and who did we
7.40
meet in the alley
7.44
three and another three
7.48
equals six