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Cartoons as a Tool for Incidental Vocabulary Acquisition in Year 6 EFL Pupils

Melita Lemut Bajec*
University of Ljubljana, SLOVENIA

Barbara Železnik
Poljane Primary School, SLOVENIA

Karmen Pižorn
University of Ljubljana, SLOVENIA

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Abstract: Children today encounter English in various contexts, with cartoons serving as a particularly influential medium. Beyond their entertainment value, cartoons also promote incidental foreign language acquisition. This article presents the findings of a study involving 240 sixth-grade pupils from Slovenian primary schools. Employing a quantitative approach, the study utilised both a questionnaire and a knowledge test to explore the relationship between English cartoon viewing and incidental vocabulary acquisition. It examined the frequency of cartoon viewing, pupils' attitudes towards English-language cartoons, and the impact of subtitles on vocabulary test performance. The results indicate that a higher frequency of cartoon viewing, positive attitudes towards English cartoons, and the use of English subtitles are significantly associated with enhanced English vocabulary knowledge. The findings underscore the educational value of English cartoons in supporting vocabulary development and highlight the potential of engaging multimedia content in fostering incidental vocabulary acquisition in both classroom settings and out-of-school contexts. Consequently, educators should incorporate cartoon-based materials to enhance vocabulary learning, introduce authentic language exposure, and provide multi-sensory experiences tailored to varying learner preferences and proficiency levels.

Keywords: *Cartoon viewing, English, incidental vocabulary acquisition, primary school, vocabulary knowledge.*

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Introduction

In today's world, media engages children from a very young age, influencing their emotional development, mental growth, and cognitive abilities (Lodhi et al., 2018; Yaseen, 2021; Webb & Rodgers, 2009). Among the most common and engaging media activities for children is cartoon viewing, which not only facilitates the incidental acquisition of foreign language vocabulary but also influences learners' attitudes toward language learning (Stamou et al., 2015). Additionally, it enhances the understanding of abstract concepts, fosters engagement, creativity, motivation (Bahrani & Soltani, 2011), and boosts children's confidence in using a foreign language (France, 2010; Webb, 2010). These benefits stem from the engaging and enjoyable nature of cartoons, making language learning more accessible and motivating for young learners.

Cartoon viewing offers numerous benefits, both within the classroom and informal learning environments. However, educators and parents must be mindful of the potential risks associated with its overconsumption (Kuppens, 2010) and ensure that both the content and duration of exposure align with children's developmental stages (Singer, 2022). Namely, excessive exposure to inappropriate content can lead to hazardous behaviour (Vijayaratnam et al., 2025), including violence and the use of inappropriate language (Lodhi et al., 2018). Additionally, it may create a blurred distinction between fiction and reality (Prithviraj et al., 2024), hinder social interactions, and impact a child's emotional development (Karki & Sravanti, 2021). Cartoons can also shape viewers' thinking (Gamage, 2019) by exerting social influence, such as either reinforcing or challenging existing social norms and values related to gender, race, ethnicity, and socioeconomic status (Priya, 2024). Therefore, both parents and educators must be media literate, understanding that media consumption needs careful consideration to ensure positive outcomes. Finally, cartoons may enhance everyday interactions, but they should never serve as a replacement for them (Krcmar et al., 2007).

Globally, a substantial body of research highlights the benefits of cartoon viewing for incidental vocabulary acquisition. For example, Karakaş and Sariçoban (2012) and Mousavi and Gholami (2014) found that exposure to meaningful and engaging content plays a crucial role in vocabulary acquisition, regardless of whether subtitles are used. On the other hand, Peters (2019) found that learners exposed to L2 subtitles made the most significant vocabulary gains compared to

* **Corresponding author:**
Melita Lemut Bajec, University of Ljubljana, Ljubljana, Slovenia. ✉ melita.lemutbajec@pef.uni-lj.si

those who watched foreign language cartoons with subtitles in their native language. Further, Almeida and Costa (2014) proved that subtitles in the original language, when compared to mere synchronisation, facilitate greater incidental foreign language acquisition. Additionally, Singer (2022) highlighted the value of subtitled cartoons for beginners, as they offer visual and textual cues. Nonetheless, he emphasised the importance of reinforcing new vocabulary through structured lessons and intentional learning strategies. Last but not least, Marzà and Torralba (2015) found that learners' preference for subtitled cartoons is shaped by their viewing habits, the readability of subtitles, and the level of engagement. Overall, the studies collectively highlight the benefits of cartoons for incidental vocabulary acquisition while emphasising that the effectiveness of subtitles can vary and that other factors must also be considered.

On the other hand, similar studies are scarce in the Slovenian context. Related research by Erjavec (2013) and Lepičnik Vodopivec and Hmelak (2022) examined the role of media in the lives of Slovenian children and highlighted the importance of introducing digital literacy education from an early age. Such education aims to develop critical thinking skills and help children use digital tools effectively and critically in their daily lives. Kosevski Puljić and Retelj (2013) investigated the impact of visual media on foreign language teaching, concluding that while teachers use technology to support teaching, they often fail to use it as a tool that enhances learning. The authors advocated for more learner-centered and task-based approaches to teaching, emphasising that these methods lead to more meaningful and effective learning, rather than simply using technology to make lessons more attractive and up-to-date. Additionally, Peštaj (2010) explored how preschool children comprehend media information, while Rek (2019) presented a review of media education in Slovenian kindergartens. Plevnik et al. (2012) investigated the methods and challenges of integrating media content into the classroom. Despite these contributions, the existing body of research in Slovenia remains largely general and does not explicitly examine the pedagogical benefits of cartoon viewing in the context of incidental foreign language acquisition, particularly in terms of vocabulary development.

In light of this context, the current study investigates the correlation between the viewing of English-language cartoons and vocabulary knowledge among Year 6 primary school pupils in the country. Its primary aim is to fill a research gap by being the first study of this kind conducted in the local area. Specifically, it investigates the correlation between the frequency of English cartoon viewing, attitudes towards this medium, and the use of subtitles among Year 6 EFL pupils. The goal is to determine how these factors contribute to incidental vocabulary acquisition.

While international research has established the general benefits of cartoon viewing for language learning, this study contributes new insights by examining these effects within the Slovenian educational and cultural context. Focusing on young EFL learners in a largely dubbed media environment, the study underscores the value of authentic multimedia exposure. Additionally, the findings provide a foundation for educators and parents to adapt their teaching strategies by including carefully selected cartoon-based materials that support vocabulary development and offer multi-sensory experiences tailored to diverse learning styles.

To achieve this aim, the following hypotheses were proposed:

H1: Pupils who watch cartoons in English more frequently will demonstrate improved performance on vocabulary tests.

H2: A more positive attitude towards English-language cartoons is associated with better vocabulary test outcomes.

H3: Pupils who watch English-language cartoons with English subtitles will achieve higher vocabulary test scores compared to those who watch cartoons with Slovenian subtitles or without any subtitles.

Literature Review

Proficiency in foreign languages is among the most vital competencies for lifelong learning, essential for personal fulfillment, a healthy and sustainable lifestyle, active citizenship, and social inclusion (Eurydice, 2023). In contemporary society, mastery of foreign languages, particularly English, is often regarded as a fundamental aspect of an individual's overall knowledge (Drakulić, 2022; Mihaljevič Djigunović, 2009; Sundin, 1999).

Research indicates that children have a natural propensity to accept and acquire languages more readily, as they are unhindered by rigid grammatical rules, societal pressures, and preconceived notions (Lah, 2013). This advantage, particularly pronounced during the critical period for second or foreign language acquisition and learning, spans early childhood to preadolescence and is especially well-suited for focusing on receptive skills (listening and reading), which form the foundation for productive skills (speaking and writing). Additionally, the heightened neuroplasticity of the developing brain enables children to absorb and process new linguistic structures with greater ease and authenticity (Pižorn, 2009). During this time, children naturally acquire native-like pronunciation, grammar, and vocabulary, as early exposure capitalises on the neurological window, facilitating enhanced phonetic perception, implicit learning, and long-term retention (Mándoki, 2023). This, in turn, enriches their comprehension, creativity, literacy, problem-solving skills, self-confidence, and cultural awareness, allowing them to appreciate both their own and others' identities and values (Ilter & Yazıcı, 2023; Mándoki, 2023). It also broadens their repertoire of learning strategies (Bland, 2019; European Commission, 2011; Pižorn, 2009). Furthermore, early exposure to foreign languages increases the likelihood of understanding linguistic structures more effortlessly later in life (European Commission, 2011). However, Krashen (1989) in his *Input Hypothesis* stresses the need for *comprehensible input* with language that is slightly beyond the current

levels but still understandable. This encourages learners to focus on understanding the meaning, rather than being preoccupied with grammar and form. Over time, learners naturally acquire the language, even though they may not produce it immediately.

The research on the age variable reveals that individuals who began learning English between the ages of 8 and 10 did not achieve the same level of proficiency as native English speakers, whereas those who started before the age of 8 were more likely to reach native-like levels (Johnson & Newport, 1989). However, newer research shows there is much individual variation and that the nature and timing of the critical period are more complex and nuanced than previously believed; additionally, newer research has shown that the critical period for syntax acquisition extends into late adolescence and does not end in early childhood as previously thought (Hartshorne et al., 2018).

Furthermore, in the realm of language acquisition and learning, success is shaped by a complex interplay of internal and external factors, extending far beyond age alone. Among the internal factors, language aptitude has received considerable attention. Dörnyei and Skehan (2003) define it as a distinct talent for learning languages that varies significantly among individuals. However, the notion of language aptitude as a singular, unified ability has since been questioned, with Dörnyei (2006) suggesting it more accurately comprises a constellation of cognitive factors that together shape an individual's overall capacity to master a foreign language. Personality traits also play a significant role. Extraversion, conscientiousness, openness to experience, and higher emotional intelligence are often associated with greater success in second language learning. In contrast, introversion, anxiety, and psychoticism may impede progress (Dewaele, 2004; Furnham & Chamorro-Premuzic, 2006). Nonetheless, these correlations, as warned by Van Daele (2007), are not universally conclusive, as individuals differ profoundly from one another.

Equally important are external factors, which interact closely with learners' internal ones. These include the broader social, educational, and political contexts in which learning takes place (MacIntyre et al., 1998). They shape individuals' and sometimes society's attitudes towards languages and language learning (MacIntyre et al., 2008). A particularly influential external factor is the role of the educator. Effective teachers can create a caring and emotionally supportive classroom environment that encourages communication and risk-taking (Walls et al., 2002), while also modelling positive attitudes and motivation for foreign language learning (Dörnyei, 2011).

Another tenet optimising foreign language acquisition and learning refers to the use of didactic approaches that involve diverse activities, aiming to create situations that mirror real-life experiences, thereby making the learning meaningful for learners (Philp, 2017). Successful foreign language learning and acquisition are further enhanced by a rich variety of quality resources in both native and foreign languages (Erjavec, 2013; Webb, 2010), which include scaffolded and appropriately challenging materials (Jazbec et al., 2015). Compelling cartoon viewing necessitates careful planning to maximise its benefits. First and foremost, it is crucial to select appropriate content (Anderson & Pempek, 2005), most preferably resembling a storybook, as it offers a rich array of context-specific language. This richness enables children to understand the message, fostering a sense of purpose and motivation (Linebarger & Walker, 2005). Exposure to language through multiple channels reinforces understanding, aids memory retention, and allows learners to process information in ways that align with their cognitive strengths, making language learning a more immersive and engaging experience (Hoter et al., 2024). In particular, subtitled cartoons stimulate multiple cognitive processes simultaneously as children actively watch the visual content, listen to the spoken language, and read the subtitles. This multimodal exposure enhances their ability to associate words with their meanings, strengthens auditory and visual processing skills and reinforces language comprehension through contextual cues (Enever, 2011). Research also demonstrates a heightened language awareness, which is seen in learners' ability to differentiate between various accents and forms of speech (Koolstra & Beentjes, 1999). This effect is attributed to the combination of visual and auditory input, along with written cues, which help learners decode words from the context (cf. Paivio's Dual Coding Theory). According to Clark and Paivio (1991), learning and memory are influenced by the combined effect of imagery and verbal associations, leading to more detailed and accessible mental representations. In the context of cartoons, visual elements serve as concrete stimuli that help generate mental imagery. When combined with verbal expressions, they facilitate deeper processing and enhance the consolidation of information into long-term memory.

Lastly, it is essential to align educational practices with modern technologies to fully harness their potential in supporting foreign language learning and foreign language acquisition (Blake, 2013). In this context, watching cartoons presents an opportunity for implicit learning as evidenced by several researchers. D'Ydewalle and Van de Poel (1999) investigated the amount of incidental foreign language acquisition among children aged 8-12 in Dutch-speaking Belgium by comparing the effects of watching subtitled TV shows versus watching only the soundtrack. Findings revealed that children acquired new vocabulary more effectively when the foreign language was heard in the audio track rather than when read in the subtitles. Mitterer and McQueen (2009) demonstrated that reading subtitles in one's native language can disrupt the ability to recognise and learn words in a foreign language, as the brain may prioritise familiar vocabulary, making it harder to notice and remember new words spoken in the foreign language. Koolstra and Beentjes (1999) conducted a study involving 246 Dutch children aged 10 to 12. They found that children who viewed the subtitled program scored highest on vocabulary tests, followed by the non-subtitled and control groups. Subtitles also improved recognition of spoken English words. Additionally, frequent home viewing of subtitled programs was associated with better vocabulary, regardless of the group. The authors suggest using subtitled media in language education, especially with teacher support,

to enhance learning outcomes. Van Lommel et al. (2006) recognised watching subtitled cartoons as a beneficial and effective strategy for learning a foreign language, beginning from the age of six. Additionally, cartoons stimulate creativity and problem-solving skills by presenting imaginative scenarios in a relaxed and enjoyable manner, which not only captures children's attention but also simultaneously boosts their confidence in using language (France, 2010; Prithviraj et al., 2024). Furthermore, it allows educators to expose children to a foreign language as spoken by native speakers (Gilmore, 2007).

Beyond mere language acquisition and learning, cartoons also foster cultural awareness. As concluded by Estrada-Chichón and Sánchez-Cabrero (2023) who conducted a study on the animated television series *Peppa Pig* among 11 Spanish pre-service teachers, Peppa Pig contains a substantial number of identifiable British cultural elements such as language, weather, foods, making the series authentic cultural material, suitable for enhancing English as a foreign language and raising cultural awareness in early childhood education settings. However, mere recognition of cultural elements does not necessarily mean that educators will effectively implement such content in the classroom. This underscores the need for specific training on how to systematically integrate cultural elements into foreign language classes, rather than assuming awareness alone is sufficient.

Methodology

Research Design

The research employed a cross-sectional, non-experimental design within the context of pedagogical inquiry, adopting a quantitative approach to explore relationships between pupils' cartoon-watching habits, subtitle preferences, and English vocabulary scores. Special attention was given to ethical considerations, including protection from harm, data confidentiality, informed consent, voluntarism, and competence, during all research phases. This acknowledgement is crucial, as research involving human participants is inherently influenced by dynamic environments (Korošec, 2023).

Sample and Data Collection

The study employed a convenience sample of 240 sixth-grade pupils from Slovenia, aged 11 and 12, during the 2023/24 school year. An initial invitation, including a detailed description of the study and survey objectives, was emailed to all Slovenian primary schools, along with a link to the instrument. School principals decided whether to distribute the link further to sixth-form English teachers and class teachers. If they did, pupils completed the instruments during English or class sessions using computers, phones, or tablets. Due to a low initial response, consistent with previous patterns of school non-responsiveness (cf. Japelj Pavešić et al., 2020; Lemut Bajec, 2024), we decided on a more targeted approach, selecting schools through social networks within local proximity.

The final sample consisted of 126 girls (52.5%) and 114 boys (47.5%), representing approximately 0.1% of all primary school pupils (196,372 pupils) and 1 % of all sixth-grade pupils in Slovenia (22,595 pupils) (Statistical Office of the Republic of Slovenia, 2024). While the sample was not randomly selected and thus may not fully reflect the demographic or regional diversity of Slovenia, it included pupils from both urban and rural areas, which offers a partial cross-section of school settings. However, it is essential to note that the aim of this research was exploratory, aiming to identify patterns that would guide future, more comprehensive research, rather than to produce generalizable findings.

A priori power analyses were conducted using G*power 3.1 (Faul et al., 2007) to determine whether the sample size was sufficient to detect expected effects. For hypotheses involving correlations (H1 and H2), assuming a medium effect size (r = .30), α = .05, and power = .80, the required sample size was 84. For the group comparison in H3, a Kruskal-Wallis test with medium effect size (f = .25), α = .05, and power = .80 required a sample size of 159. For the group comparison in H4, a Kruskal-Wallis test with a medium effect size (f = .25), α = .05, and power = 0.80 required a sample size of 180. The actual sample of 240 pupils exceeded these thresholds, ensuring adequate statistical power and supporting the robustness of the analyses. The required sample sizes were further verified by SPSS Power analysis (Version 28). We decided to report the most conservative estimates (Table 1).

Table 1. Required Sample Sizes Based on A Priori Power Analyses for Each Hypothesis

H	Test used	Assumed effect size	(α)	Power (1–β)	Required *N*	Actual *N*
H1	Spearman correlation	r = .30	.05	.80	84	240
H2	Spearman correlation	r = .30	.05	.80	84	240
H3	Kruskal-Wallis (3 groups)	f = .25	.05	.80	159	240
H4	Kruskal-Wallis (4 groups)	f = .25	.05	.80	180	249

The instrument was structured in two parts. The first part consisted of a questionnaire, while the second part was a knowledge test. It was developed by the researchers following a thorough literature review, with a strong emphasis on alignment with the study's hypotheses. While there was no time limit, all pupils finished within 15 minutes.

The questionnaire consisted of:

- Demographic questions: the participants' age, gender, and their final grade in English from the previous school year.
- Three closed-ended survey questions: (1) Frequency of watching English-language cartoons: *How many times a week do you watch English-language cartoons at home?* Pupils selected from five predefined options. (2) Attitudes towards watching cartoons in English: *How do you like watching cartoons in English?* Pupils rated their experience using a five-point scale. (3) Viewing habits related to subtitles: *Do you usually watch English-language cartoons with English subtitles, Slovene subtitles, or without subtitles?*

The second part, the knowledge test, consisted of 20 questions. Vocabulary items were developed in relation to the CEFR, primarily targeting the A1–A2 proficiency levels, which, according to the English language curriculum for Slovenian primary schools, represent the expected level of knowledge for sixth-grade learners (Andrin et al., 2016). The knowledge test was further approved by a panel of three experienced English language teachers and one assessment expert, who reviewed each item for relevance, clarity, and age-appropriateness.

This alignment helped ensure that the test content was developmentally suitable and pedagogically grounded. It was designed as a revision exercise and covered various everyday vocabulary topics (e.g., professions, nature, animals, food, the human body, household objects, and emotions) that extend beyond those typically addressed in school. Each question provided a description of a word in English, and pupils were tasked with selecting the correct answer from the four provided options. Their responses offered insight into whether they understood the vocabulary related to the topic. Each correct response earned 1 point. For example:

Q1 - This person's job is to write about the news for a newspaper.

(a) a photographer, (b) an astronaut, (c) a journalist, (d) a poet

Q2 - A tree that has needles.

(a) birch tree, (b) oak tree, (c) maple tree, (d) pine tree

Q3 - A structure built over a river or road, allowing people and vehicles to cross from one side to the other.

(a) pavement, (b) an airport, (c) a bridge, (d) a railway station

To assess the reliability of the test, the Kuder-Richardson Formula 20 (KR-20) was calculated. The results demonstrated a high level of reliability with the test portion of the instrument (KR-20 = .88). The results of the difficulty indices (*DI*) were within the acceptable range of .50 to .80, except for item Q6, which was found to be too difficult (Q 6: It is produced by flowers and it is food for bees). The discrimination indices (*D*) were also adequate, with most items showing values greater than .40 (Table 2).

Table 2. Item Analysis: Difficulty (DI) and Discrimination (D) Indices for Test Questions

	Q1	**Q2**	**Q3**	**Q4**	**Q5**	**Q6**	**Q7**	**Q8**	**Q9**	**Q10**
DI	.73	.46	.75	.58	.75	.30	.80	.86	.73	.82
D	.63	.57	.60	.48	.63	.49	.62	.42	.57	.49
	Q11	**Q12**	**Q13**	**Q14**	**Q15**	**Q16**	**Q17**	**Q18**	**Q19**	**Q20**
DI	.44	.63	.78	.75	.67	.83	.66	.80	.79	.78
D	.71	.77	.65	.62	.69	.37	.89	.63	.62	.54

The objectivity of the questionnaire was assured by using closed-ended questions and assessment scales. Additionally, clear written instructions and unguided procedures were employed to maintain the data objectivity during the data collection process. To ensure content validity, a pilot study was conducted with 17 Slovenian 6th-grade pupils, who were not included in the main study. Their feedback informed necessary adjustments to both the questionnaire and the knowledge test.

Data Analysis

The questionnaire was available online. Data was collected between June 1, 2024, and June 24, 2024. The collected data was analysed using SPSS (Statistical Package for the Social Sciences) and G*Power for power analysis.

The following methods were employed for data analysis:

(1) Basic descriptive statistics: frequencies (*f*) and percentage frequencies (*f%*) were utilised for interpreting categorical variables; mean rank ($\overline{R}$) was applied for non-parametric tests, while the arithmetic mean (*M*) and modus (*Mo*) were used to enhance the interpretation of results from the tests.

(2) Non-parametric tests: Initially, the Kolmogorov-Smirnov test was performed to ascertain the distribution of the data, where the statistic *D*, *p*-value, and standard deviation (*SD*) were reported. Given the violation of normality, several non-parametric tests were conducted: the Mann-Whitney U test was used to compare the mean ranks of two independent groups (*p*- and *r*-value reported), Spearman's correlation coefficient (ρ- and *p*-value reported) was employed to evaluate correlation, and the Kruskal-Wallis test was applied to compare k-independent groups (*p*- and ε^2- value reported).

Findings/Results

This section outlines the study's findings. First, we examine the correlation between the frequency of cartoon viewing and performance on vocabulary tests. Then, we examine the relationship between pupils' attitudes towards English-language cartoons and their performance on vocabulary tests. Lastly, we analyse how different subtitle types influence vocabulary test performance.

Frequency of English-Language Cartoon Viewing and Vocabulary Test Performance

Initially, the pupils took an English vocabulary test. As shown in Table 3, the average score was 13.9 out of 20 points, with a minimum of 3 and a maximum of 20. The most common score was 16 points. This suggests that, on average, pupils demonstrated a moderate command of English vocabulary, with many performing slightly above average. Subsequently, a Kolmogorov-Smirnov test was conducted to assess the data distribution, revealing a non-normal distribution ($p < .05$). This non-normal distribution may reflect underlying differences in pupils' vocabulary skills, possibly due to variations in language backgrounds, instructional approaches, personality traits, and other factors. As a result, non-parametric tests were utilised for further analysis.

Table 3. Kolmogorov-Smirnov Test for English Vocabulary Test Scores

No. of Pupils	*f* (%)	*M*	*Min*	*Max*	*Mo*	*D*	*p*
240	100%	13.9	3	20	16	.172	< .001

To gain a better overall understanding of the sample, we also asked pupils about their final grade in Year 5 in the questionnaire (Figure 1).

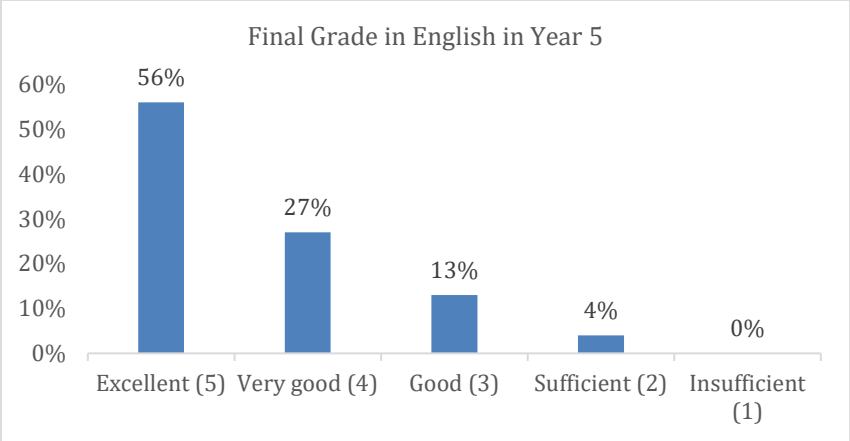

Figure 1. Final Grade in English in Year 5

The data shows that 135 pupils (56%) had a final grade of 5 (excellent), 64 pupils (27%) received a 4 (very good), 31 pupils (13%) earned a 3 (good), nine pupils (4%) achieved a 2 (sufficient) and one pupils (0%) received a 1 (insufficient). Overall, 83% of the pupils had a final grade of either 5 (excellent) or 4 (very good). The results suggest that the pupils in the sample generally performed well in the foreign language subject, English.

Following that, the participants completed the questionnaire. The findings concerning the frequency of watching English-language cartoons indicate that the largest group (36%) rarely engages with this type of activity, while 30% watch up to three times a week. Additionally, 22% of pupils watch English-language cartoons daily, and 12% never watch them at all (Table 4). This distribution suggests varied exposure to English through media, with a notable proportion (52%) engaging with cartoons at least several times a week.

Additionally, a comparison of the arithmetic means indicates that children who watch English-language cartoons daily performed the best ($M = 15.72$, $SD = 4.44$), followed by those who view them up to three times a week ($M = 14.96$, $SD = 4.19$). The arithmetic means declined further for the group that watches cartoons infrequently ($M = 13.24$, $SD = 4.79$) and were lowest among those who reported never watching English-language cartoons ($M = 9.79$, $SD = 4.73$) (Table 4). Such results suggest a meaningful association between cartoon-viewing frequency and vocabulary knowledge; pupils with greater exposure to English-language cartoons appear to acquire vocabulary more effectively, possibly due to

repeated auditory and contextual reinforcement. It also supports the argument that informal media exposure can play a beneficial role in language development.

Table 4. Mean Vocabulary Test Scores by Cartoon Viewing Frequency

Frequency of English-Language Cartoon Viewing	No. of Pupils	*f* (%)	*M*	*SD*
Every day	53	22 %	15.72	4.44
Up to 3 times a week	72	30 %	14.96	4.19
Rarely	87	36 %	13.24	4.79
Never	28	12 %	9.79	4.73
Total	240	100 %	13.9	4.85

Spearman's correlation coefficient was utilised to examine the relationships between cartoon viewing frequency and vocabulary test scores. The results revealed a moderate positive correlation ($\rho = .35$, $p < .001$) (Table 5), suggesting a meaningful relationship between the two variables. It implies that as cartoon viewing increases, so do test scores, thereby establishing a statistically significant relationship between the amount of cartoon viewing in English and vocabulary test performance.

Table 5. Spearman's Correlation between Weekly Cartoon Viewing in English and Vocabulary Test Performance

		Test Scores
Frequency of cartoon viewing per week in English	Correlation coefficient	.35
	Sig. (2-tailed)	< .001
	N	240

Finally, the Kruskal-Wallis test (Table 6) revealed a statistically significant difference in vocabulary test performance based on the frequency of watching cartoons in English ($H(3) = 31.67$, $p < .001$), with a moderate effect size ($\varepsilon^2 = 0.13$). Participants who watched cartoons every day had the highest vocabulary scores, while those who never watched had the lowest.

Table 6. Kruskal-Wallis Test of Vocabulary Scores by Frequency of Cartoon Viewing

Cartoon Viewing Frequency	*N*	$\overline{R}$	Kruskal-Wallis Test	*p*	ε^2
Every day	53	150.12	31.67	< .001	.13
Three times a day	72	133.17			
Rarely	87	109.48			
Never	28	66.09			
Total	240				

Finally, post hoc pairwise comparisons using Dunn's test (Table 7) revealed no statistically significant differences between the "every day" and the "three times a week" groups, suggesting that increasing the frequency of exposure from three times to every day did not result in a meaningful difference in performance. Similarly, the comparison between the "rarely" and "three times a week" groups did not reach statistical significance after adjustment, indicating that moderate increases in exposure may not lead to consistently measurable gains. In contrast, all other group comparisons showed statistically significant differences, with adjusted *p*-values ranging from .00 to .02. These results suggest that participants who were exposed to subtitles more frequently (at least three times a week) outperformed those with minimal or no exposure. However, the absence of a difference between adjacent frequency groups hints at a possible non-linear relationship, with diminishing returns at higher exposure levels.

Table 7. Dunn's Post Hoc Test (Pairwise Comparisons with Bonferroni Correction)

Sample 1-Sample 2	Mean rank difference	*SD*	*Z*	*p*	*p (adj.)*
Never vs. Rarely	43.33	15.03	2.89	.004	.02
Never vs. Three times a week	67.08	15.41	4.36	<.001	.00
Never vs. Every day	84.03	16.16	5.2	<.001	.00
Rarely vs. Three times a week	23.69	11.02	2.15	0.032	.19
Rarely vs. Every day	40.65	12.05	3.37	<.001	.00
Three times a week vs. Every day	16.95	12.52	1.35	.176	1

In conclusion, the results support Hypothesis 1: The more cartoons pupils watch in English, the better their vocabulary test performance.

Attitudes Towards English-Language Cartoons and Vocabulary Test Performance

Pupils were surveyed about their attitudes towards watching English-language cartoons. The results revealed that the majority (62%) held positive views, stating that they either like or greatly enjoy English cartoons. A portion (27%) was indifferent, and a smaller percentage (11%) expressed negative attitudes, indicating that they either disliked or strongly disliked English cartoons.

This data was subsequently analysed in relation to mean vocabulary test scores, revealing that children with more favourable attitudes towards English-language cartoons tended to score higher on the vocabulary tests (M = 15.8, SD = 2.3) than those who were indifferent (M = 13.2, SD = 2.6) or disliked cartoons (M = 8.4, SD = 3.1). On average, those who enjoyed English-language cartoons outperformed those who disliked them by 7.44 points, effectively doubling the test scores of the group with the most negative attitudes (Table 8). Practically, the findings suggest that pupils with more favourable attitudes toward English-language cartoons tend to perform markedly better in vocabulary tests.

Table 8. Comparison of Pupils' Attitudes towards English-Language Cartoons and their Mean Vocabulary Scores

Attitudes towards English-Language Cartoons	No. of Pupils	*f* (%)	*M*	*SD*
I like English cartoons a lot.	66	28 %	16.14	4.29
I like English cartoons.	82	34 %	13.98	4.75
I'm indifferent to English cartoons.	65	27 %	12.58	4.37
I don't like English cartoons.	17	7 %	12.94	5.59
I don't like English cartoons at all.	10	4 %	8.7	4.03
Total	240	100 %	13.9	4.85

Spearman's correlation coefficient was used to evaluate the relationship between pupils' attitudes towards English-language cartoons, and their vocabulary test scores (Table 9). The analysis revealed a moderate positive correlation (ρ = .37, p < .001), suggesting that pupils who hold a more favourable view of watching cartoons in English tend to achieve higher scores on the vocabulary test. According to Cohen's (1988) guidelines, this correlation reflects a moderate effect size, suggesting a meaningful association between attitude and vocabulary performance. Practically, this implies that pupils who enjoy English-language cartoons may be more engaged or more frequently exposed to the language, resulting in enhanced vocabulary acquisition. Although this result is statistically significant and may be generalised to a larger population, caution is warranted due to the use of a non-random and unrepresentative sample size. Nevertheless, the findings support Hypothesis 2: The more positive the pupils' attitudes towards English-language cartoons, the better their performance on the vocabulary test.

Table 9. *Spearman's Correlation between Test Performance and Attitudes towards English-Language Cartoons*

		Test Scores
Attitude towards English-language cartoons	Correlation coefficient	.37
	Sig. (2-tailed)	< .001
	N	240

Moreover, we sought to evaluate whether the five attitude groups exhibited significant differences in their vocabulary test performance. The results from the Kruskal-Wallis test revealed statistically significant variations in vocabulary performance across the different attitude groups towards English-language cartoons ($H(4)$ = 37.38, p < .001). This further illustrates that attitudes regarding the viewing of cartoons influence vocabulary test results (see Table 10).

Table 10. Kruskal-Wallis Test Comparing Attitudes towards Watching Cartoons and Vocabulary Test Performance

	Attitude towards English-Language Cartoons	*N*	$\overline{R}$	Kruskal-Wallis Test	*p*
Test scores	I like English cartoons a lot.	66	157.47	37.38	< .001
	I like English cartoons.	82	120.89		
	I don't care about English cartoons.	65	95.15		
	I don't like English cartoons.	17	111.71		
	I don't like English cartoons at all.	10	53.00		
	Total	240			

The effect size, calculated as ε^2 = .16, indicated a large effect (Tomczak & Tomczak, 2014), suggesting that attitudes toward cartoons explain a substantial portion of the variability in test scores. Practically, this implies that more favourable attitudes toward English-language cartoons are not only statistically relevant but also educationally, potentially enhancing vocabulary acquisition through increased motivation, engagement, or exposure.

Cartoon Viewing per Subtitle Type and Vocabulary Test Performance

Pupils were surveyed on their preferences for watching cartoons—whether with English subtitles, Slovene subtitles, or without any subtitles. The findings revealed that 50% of the pupils watch cartoons without subtitles, 36% opt for Slovene subtitles, and 13% prefer English subtitles (Table 11).

Further analysis compared the viewing habits with the average scores from vocabulary tests. The Kruskal-Wallis test was conducted to determine whether there are statistically significant differences among groups of children by subtitle type, confirming statistically significant differences among the three groups ($H(2) = 6.51$, $p = .04$). Pupils who watch English-language cartoons with English subtitles achieved the highest average score ($M = 15.0$, $\bar{R} = 135.66$), whereas those who watched the same cartoons with Slovene subtitles recorded the lowest average score ($M = 13.03$, $\bar{R} = 105.86$) and those who watched without subtitles fell in between ($M = 14.23$, $\bar{R} = 127.02$) (Table 11). The effect size, calculated as $\varepsilon^2 = .02$, indicates a small effect (Tomczak & Tomczak, 2014), suggesting that while subtitle type does influence vocabulary test performance, the portion of the variance it explains is limited. Nonetheless, the practical implications remain meaningful in the context of language exposure and learning contexts.

Table 11. Kruskal-Wallis Test Comparing English Vocabulary Test Scores across Pupils Watching Cartoons with Different Subtitle Types

	Subtitles	**No. of Pupils**	***f* (%)**	***M***	$\overline{R}$	**Kruskal-Wallis Test**	***p***
Vocabulary test performance	Slovenian	87	36 %	13.03	105.86	6.506	.04
	English	32	13 %	15.0	135.66		
	None	121	50 %	14.23	127.02		
	Total	240	100 %	13.9			

To explore specific group differences, Mann-Whitney tests were conducted (Table 12). The findings reveal a statistically significant difference between pupils who watch English-language cartoons with English subtitles and those who view the same cartoons with Slovenian subtitles ($U = 1026.000$, $p = .03$), with the former group performing better. The effect size ($r = .20$) indicates a small effect. There's a small but real difference in vocabulary test scores between those who used Slovenian subtitles and those who used English subtitles. Furthermore, there is a statistically significant difference between pupils who watch cartoons with Slovenian subtitles and those who watch without subtitles ($U = 4356.000$, $p = .03$), indicating much better performance for the group that watches without subtitles. Again, the effect is small ($r = .15$). In both cases, pupils using Slovene subtitles performed significantly worse. However, no statistically significant differences were observed between the group watching cartoons with English subtitles and the group watching cartoons without subtitles ($U = 1817.000$, $p = .59$). The effect size was negligible ($r = 0.04$). The effect sizes across all comparisons were small, indicating that while subtitle type had a statistically significant impact in some cases, its overall influence on vocabulary test performance was limited.

The findings support Hypothesis 3: Pupils who watch English-language cartoons, either with English subtitles or without, achieve higher scores on vocabulary tests compared to those who watch English-language cartoons with Slovenian subtitles.

Table 12. Mann-Whitney U Test Comparing Vocabulary Test Performance across Subtitle Types

	Subtitles	***N***	***M***	**Sum of $\overline{R}$**	***U***	***z***	***p***	***r***
Vocabulary test performance	Slovenian	87	55.79	4854.00	1026.000	-2.20	.03	.20
	English	32	71.44	2286.00				
	Total	119						
Vocabulary test performance	Slovenian	87	94.07	8184.00	4356.000	-2.13	.03	.15
	None	121	112.00	13552.00				
	Total	208						
Vocabulary test performance	English	32	80.72	2583.00	1817.000	-.54	.59	.04
	None	121	76.02	9198.00				
	Total	153						

Discussion

The results suggest that pupils who engage more frequently with English-language cartoons tend to perform better on vocabulary assessments. This correlation aligns with previous research linking cartoon exposure with vocabulary gains among school-aged learners (Aziz & Sulicha, 2016; Fathul, 2016; Mousavi & Gholami, 2014; Omojuwa et al., 2009; Rawan et al., 2023; Shabani, 2014). The observed relationship between media exposure and vocabulary development

underscores the potential value of incidental learning within classroom environments, where it can complement intentional learning strategies and encourage participation, especially for learners with limited language skills (Gamage, 2019; Singer, 2022). Cartoon viewing is also associated with positive attitudes; a finding aligned with Gamage (2019) and Saiddina and Darma (2024). Broader research further connects positive learner attitudes to increased motivation, enhanced language skills, and academic engagement (Larasati & Simatupang, 2020; Lubis, 2015; Lu et al., 2023; Nyamubi, 2016; Salainti, 2023). This also resonates with Krashen's (1982) *Affective Filter Hypothesis*, as cartoons may lower affective filters and enhance vocabulary acquisition by creating a low-pressure learning environment. In addition to their motivational appeal, cartoons may also support the introduction of more abstract and complex concepts, help educators identify learners' misconceptions, understand cognitive processes, and contribute to collaborative learning experiences (Bahrani & Soltani, 2011; Jamal et al., 2019). Particularly, concept cartoons may stimulate students' curiosity and active learning by presenting engaging, problem-based scenarios. The visual scaffolding supports the activation of prior knowledge, encourages conceptual conflict, and enhances critical and abstract thinking (Jamal et al., 2019; Önal, 2023). The dual coding of information, visual and verbal, enhances memory and retrieval, thus facilitating deeper processing and enhancing the consolidation of information into long-term memory (Clark & Paivio, 1991).

The role of subtitles also emerged as an important factor in vocabulary acquisition. Pupils who reported watching English-language cartoons with English subtitles tended to achieve higher scores than those who used Slovene subtitles or none at all. The association between English subtitles and improved vocabulary performance supports prior research (Almeida & Costa, 2014; Peters, 2019; Winke et al., 2010), which suggests that subtitled media may facilitate vocabulary acquisition by reinforcing auditory input with written clues. English subtitles, by reinforcing the link between the sound and written forms, facilitate phonetic retuning at the prelexical level, enabling learners to generalise beyond specific phrases (Mitterer & McQueen, 2009). By providing viewers with immediate confirmation of spoken input, they improve comprehension and alleviate language-related anxiety (Bahrani & Soltani, 2011; Bird & Williams, 2002; Ghorbani, 2011; Markham, 2001). Conversely, pupils who watched English-language cartoons subtitled in Slovene tended to perform the worst. The observed negative effect of native-language subtitling aligns with findings by Mitterer and McQueen (2009), who noted native-language subtitles may hinder foreign-language perception as they appear to create lexical interference. This interference occurs because the phonological structure activated by native-language subtitles (e.g., Slovene) does not align with the auditory input in the target language, thereby disrupting the process of lexically guided perceptual learning. This mechanism, whereby listeners use their knowledge of words to fine-tune their perception of unfamiliar speech sounds, is critical for adapting to foreign speech patterns. While subtitles – regardless of type – may still serve as a helpful scaffold for learners with emerging language skills (Singer, 2022), only foreign-language subtitles actively support cognitive mechanisms involved in accurate speech perception and long-term vocabulary acquisition.

Conclusion

The article reports on a study that investigated the correlation between watching English cartoons and the acquisition of English vocabulary among Year 6 Slovenian primary school pupils. This study is the first empirical investigation in the Slovenian context to examine the role of English-language cartoons in incidental vocabulary acquisition among primary school EFL learners. It adds to the limited body of research in this area and contributes a novel, multidimensional analysis that considers exposure frequency, learner attitudes, and subtitle use. Additionally, the development of a custom-designed, age-appropriate vocabulary test offers a useful foundation for future research. While preliminary analyses indicate good internal consistency, further studies are needed to ensure its full validation.

The research findings reveal that a greater amount of cartoon viewing, more favourable attitudes toward watching English cartoons, and the use of English subtitles are associated with higher levels of vocabulary knowledge. While the correlational design limits causal interpretation, the results suggest that English cartoons may serve as a valuable source of incidental vocabulary acquisition. Given their enjoyable nature and multi-sensory appeal, cartoons may help foster positive attitudes toward foreign language learning and provide authentic input that supports diverse learning styles. These insights highlight the potential pedagogical value of multimedia content as a supplementary resource in language education. However, the findings should be interpreted cautiously due to the use of a non-random convenience sample, which limits the generalisability of the results beyond the study population. Overall, these contributions offer preliminary evidence that may inform future experimental or longitudinal research.

Recommendations

Based on the findings, two key directions for further action emerge. The first concerns future research and the development of context-sensitive assessment tools. Given that the vocabulary test in this study was self-designed, it would be useful to examine whether standardised assessment tools such as the *Peabody Picture Vocabulary Test* (Dunn, 2018) or the *British Picture Vocabulary Scale* (Dunn et al., 20011) can be effectively applied to diverse learner populations in Slovenia and if they give relatable results. Both tests are widely used to assess receptive vocabulary in children with typical development, language impairments, autism, or English as an additional language, within the cultural and linguistic contexts of the United States or the United Kingdom, respectively. Consequently, their direct application in Slovenian may require linguistic and cultural adaptation. Nonetheless, both standardised instruments could serve as

reference models for the development and validation of vocabulary assessments tailored to the Slovenian contexts. In this regard, the self-devised test used in this study also holds potential as a reference tool for future use, provided it undergoes rigorous validation and standardisation against internationally recognised benchmarks.

The second direction concerns practical pedagogical applications in classroom settings. To support learners' foreign language development, we recommend that educators regularly incorporate short, age-appropriate cartoon clips with the same language subtitles into their weekly sessions. Ideally, the viewing sessions should be followed by vocabulary-based activities, such as matching words to pictures or using newly introduced words in simple sentences to reinforce comprehension and usage. For learners with additional language support needs (e.g., academically weaker students, migrant learners, those with language impairments, etc.), educators are encouraged to incorporate repetitive and structured cartoon content. Such materials feature predictable language patterns and recurring phrases that help reduce cognitive load, yet facilitate the acquisition and retention of key vocabulary and sentence structures. This supports the gradual internalisation of language rules in an accessible and engaging way.

Additionally, educators can promote family engagement by providing curated lists of recommended English-language cartoons for home viewing. In the case of migrant children who are not yet proficient in the language of schooling, teachers might additionally offer families high-quality multimedia resources in the language of schooling, a foreign language (English), and the child's first (mother) language. This multimodal exposure can aid in smoother linguistic and cultural integration, ultimately contributing to improved academic performance.

Limitations

A key limitation of our study lies in the use of a non-representative sample, stemming from low school response rates that made randomised sampling unfeasible. This non-random approach may have contributed to sample bias and may have affected the overall validity of the results. To strengthen future research, efforts should be made to secure broader participation and employ stratified random sampling procedures to ensure balanced representation across regions, ages, genders, and school grades, thereby enhancing the study's external validity and general applicability of the findings.

In addition, future studies should account for potential confounding variables that may influence vocabulary acquisition. These include (1) socioeconomic status, as children from higher socioeconomic backgrounds often have greater access to English-language media, private lessons, or educational technology, which may improve vocabulary independently of cartoon exposure; (2) parental support and education, since parents who value language learning or speak English themselves may encourage or supplement their children exposure to English beyond media consumption; (3) existing English proficiency, which may stem from travel or bilingual households regardless of cartoon exposure; (4) differences in teacher instruction, as some teachers may place greater emphasis on vocabulary development, influencing test performance independently; (5) learner motivation, since more motivated pupils are likely to engage more deeply with English learning overall; (6) the type and quality of cartoons, as different cartoons vary in language richness; (7) reading proficiency, which may influence how effectively children benefit from subtitles. To better isolate the effects of cartoon exposure, future research should aim to control for these variables, either by collecting detailed background information or by using a more detailed controlled experimental design.

Ethics Statements

The study was conducted in accordance with the *Code of Ethics* and the *Guidelines for Ethical Conduct in Research Involving People,* as established by the University of Ljubljana. It was also approved by the Faculty of Education, University of Ljubljana. Participants' informed consents were obtained in accordance with the required stipulations.

Conflict of Interest

The authors report that there are no competing interests to declare.

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Generative AI Statement

We, the author(s) of this work, used the AI tool Grammarly Premium to proofread. After using this AI tool, we reviewed and verified the final version of the manuscript. We take full responsibility for the content of the published work.

Authorship Contribution Statement

Lemut Bajec: Concept and design, analysis, writing, reviewing, drafting manuscript, statistical analysis, critical revision of manuscript. Železnik: Concept and design, data acquisition, data analysis/interpretation, statistical analysis. Pižorn; concept and design, supervision, critical revision of manuscript, final approval

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