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Proportions of Cartoons in Elementary School Instruction: Teacher Perspectives

Wanicha Sakorn[1] & Siriwiwat Lata[2]

[1] Faculty of Education, Rajabhat Maha Sarakham University, Thailand

[2] Faculty of Informatics, Mahasarakham University, Thailand

Correspondence: Wanicha Sakorn, Faculty of Education, Rajabhat Maha Sarakham University, Thailand.

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Abstract

This study investigates elementary school teachers' perceptions of the appropriate proportions of cartoons for instructional purposes, with a focus on the Thai educational context. The research aims to shed light on teachers' preferences for cartoon proportions across different grade levels, contributing valuable insights into the effective use of cartoons in elementary school instruction. A questionnaire-based approach was employed to gather data from 78 elementary school teachers. The study found that teachers held a positive perception of cartoons as effective tools for teaching primary school students, with participants favoring distinct cartoon proportions for different grade levels. Notably, larger cartoon scales were preferred for early grades (Grade 1 and Grade 2), while smaller scales found favor with older students in Grades 4, 5, and 6. These findings highlight the nuanced considerations educators make when integrating cartoons into their instructional materials and underscore the potential of cartoons to enhance the quality of elementary school education.

Keywords: cartoon, elementary school education, proportion of picture

1. Introduction

Cartoons have become integral to the landscape of elementary school education, captivating the imagination and attention of young learners in ways that traditional teaching methods often struggle to achieve (Minárechová, 2016). The importance of cartoons in elementary education transcends mere entertainment; they possess the potential to significantly enhance the quality of instruction, offering a multi-sensory, engaging, and effective medium for delivering educational content (Gamage, 2019). In this era of educational innovation, it is crucial to explore the role of cartoons in elementary education through the lens of prominent educational theories such as cognitive and constructivist theories, shedding light on how they contribute to the development of effective pedagogical practices.

Educational theories provide a robust theoretical foundation for understanding the incorporation of cartoons into elementary school instruction (Kaur, 2021). Cognitive theory underscores the significance of active engagement and mental processing in the learning process. Cartoons, with their vibrant visuals and narrative structures, have the power to stimulate cognitive processes, facilitate information retention, and promote a deeper understanding of complex concepts (Ozdemir, 2022). Moreover, constructivism posits that learners actively construct knowledge through their experiences and interactions. Cartoons, being interactive and participatory in nature, align seamlessly with this theory by encouraging students to make connections, draw conclusions, and construct their own understanding of educational content (Abuzahra, Farrah, & Zalloum, 2016).

The utilization of cartoons in elementary school instruction has garnered widespread acceptance among scholars (e.g., Dalacosta, Kamariotaki-Paparrigopoulou, Palyvos, & Spyrellis, 2009; Ibda, Prabandari, & Al-Hakim, 2023; Nazar, Farukh, Ahmad, & Mansha, 2019; Yılmaz, Yaşar, & Kadan, 2021) due to their demonstrated positive impact on the quality of education across various disciplines. For instance, Dalacosta et al. (2009) conducted a study revealing that the incorporation of animated cartoons significantly enhances young students' comprehension of complex science concepts, often notorious for causing misconceptions. Similarly, Ibda et al. (2023) and Nazar et al. (2019) have documented how cartoons contribute to improved learning outcomes in language studies among elementary school students.

In the context of teachers' perceptions regarding the integration of cartoons into elementary education, previous

research (e.g., İbili & Sahin, 2016; Khalid, Meeran, & Halim, 2010; Turan, 2014) has indicated that educators widely endorse the use of cartoons as a pedagogical tool that aligns with the nature of elementary school learning. However, it is noteworthy that there exists a notable gap in the literature concerning the investigation of the optimal proportion of cartoons that teachers deem suitable for enhancing students' learning experiences. This gap represents an intriguing and potentially significant area of study, as it has the potential to provide valuable insights into the nuanced utilization of cartoons within the context of elementary school instruction. Such an inquiry can enrich our understanding of how to effectively harness cartoons as an educational resource.

The importance of exploring the proportion of cartoons in elementary school instruction becomes evident when considering the multifaceted nature of educational contexts. The efficacy of incorporating cartoons depends on various contextual factors, including the prevailing learning culture, diverse teaching styles, and the perceptions of educators. Recognizing this complexity, the current study embarks on an investigation into teachers' perceptions regarding the use of different types of cartoons in the development of teaching materials for elementary school instruction. By delving into these perceptions, the study aims to contribute valuable insights into the optimization of cartoon usage, offering guidance on achieving an effective educational experience for young learners.

2. Methodology

2.1 Participants

The study included 78 elementary school teachers from public schools within the Thai educational system. These participants were chosen through a purposive sampling approach, adhering to specific criteria: firstly, they held teaching responsibilities; secondly, they were engaged in instructing elementary school students from grades 1 to 6; and thirdly, they possessed prior experience in integrating cartoons into their instructional practices. The ethical aspects of conducting research involving human subjects were carefully observed in the treatment of these participants.

2.2 Instrument

The study employed a single research instrument, namely a questionnaire, designed to gauge elementary school teachers' perceptions regarding the utilization of cartoon proportions in their instructional practices. This questionnaire encompassed three distinct sections.

The first section focuses on background information of the participants. It involved the aspects of gender, age, educational level, teaching experience, and teaching subjects.

The second section involved the presentation of six cartoon images, featuring a woman, a man, a giraffe, an elephant, a car, and a tree, each depicted in varying proportions ranging from 1:1 to 1:8. Respondents were tasked with evaluating the appropriateness of these proportions for teaching purposes.

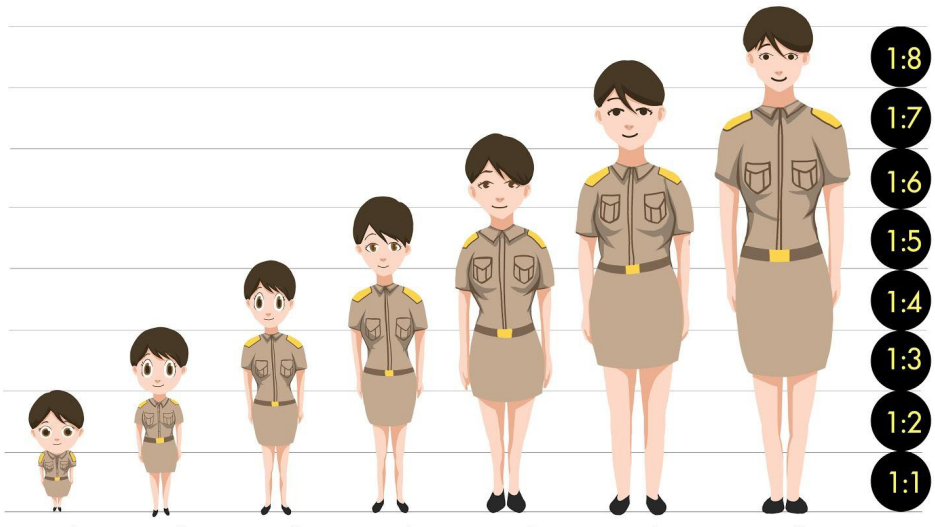

Figure 1. Woman cartoon picture

The last section focused on assessing the suitability of the provided cartoons for elementary school instruction.

This segment comprised five questions that delved into aspects such as the appropriateness of the cartoons, their capacity to attract students' attention, their relevance in teaching, the suitability of the proportions, and their overall appropriateness for instructing elementary school students.

Furthermore, it is noteworthy that the questionnaire demonstrated a high level of reliability, with a reported Cronbach's alpha coefficient of 0.96, reinforcing the internal consistency and trustworthiness of the instrument. Consequently, the questionnaire encompassed two primary components: one for discerning the most suitable proportion (1:1-1:8) for teaching each elementary school grade (1-6), and another for evaluating the quality and appropriateness of the chosen cartoons for instructional purposes.

2.3 Data Analysis

The data were analyzed using descriptive statistics. Mean score, standard deviation, percentage, and frequency were used to analyze the data gained from the questionnaire.

3. Results

3.1 Participant Demographic

In the context of the 78 study participants, the demographic distribution was as follows: there were 15 males and 63 females. In relation to age demographics, 5 participants were younger than 25 years, 42 fell within the age bracket of 25 to 30 years, 18 were between the ages of 36 and 45, 6 participants were aged between 46 and 55, and 7 individuals were older than 55 years. Regarding participants' educational attainment, 62 held bachelor's degrees, while 16 possessed master's degrees. Teaching experience varied among the participants, with 26 having less than 5 years of experience, 28 having 5 to 10 years of experience, 13 having 11 to 15 years of experience, and 11 participants having more than 15 years of teaching experience. Furthermore, participants were engaged in teaching a range of subjects, with 8 specializing in science, 6 in mathematics, 14 in language instruction, 2 in social studies, 1 in physical education, 2 in art, 12 in domestic science, and 32 in childhood education.

Table 1. Participant demographic

Genders	n
Male	15 (19.23%)
Females	63 (80.77%)
Age groups	
Younger than	5 (6.41%)
25-30 years	42 (53.85%)
36-45 years	18 (23.08%)
46-55 years	6 (7.69%)
Older than 55	7 (8.97%)
Educational levels	
Bachelor's degree	62 (79.49%)
Master's degree	16 (20.51%)
Teaching experience	
Less than 5 years	26 (33.33%)
5-10 years	28 (35.90%)
11-15 years	13 (16.67%)
More than 15 years	11 (14.10%)
Teaching subjects	
Science	8 (10.26%)
Mathematics	6 (7.69%)
Language	14 (17.95%)
Social studies	2 (2.56%)
Physical education	1 (1.28%)
Art	2 (2.56%)
Domestic science	12 (15.38%)
Childhood education	32 (41.03%)

3.2 Teachers' Perception of Cartoon Proportions

Table 2. Teachers' perception of cartoon proportions

		Woman cartoon		Man cartoon		Giraffe cartoon		Elephant cartoon		Car cartoon		Tree cartoon		Average
		Pro.	%	Pro.	%	Pro.	%	Pro.	%	Pro.	%	Pro.	%	Pro.
1	Grade 1	1:1	38.46	1:1	44.87	1:1	29.49	1:1	29.49	1:1	26.92	1:1	26.92	1:1
2	Grade 2	1:2	37.18	1:2	39.74	1:2	34.62	1:2	34.62	1:2	33.33	1:2	28.21	1:2
3	Grade 3	1:3	33.33	1:3	34.62	1:3	32.05	1:3	32.05	1:3	30.77	1:3	26.92	1:3
4	Grade 4	1:4	33.33	1:4	39.74	1:4	37.18	1:4	28.21	1:4	33.33	1:4	39.74	1:4
5	Grade 5	1:5	33.33	1:5	28.21	1:5	29.49	1:3	23.08	1:5	24.36	1:5	25.64	1:5
6	Grade 6	1:6	26.92	1:6	26.92	1:6	26.92	1:2	24.36	1:2	25.64	1:2	21.79	1:2, 1:6

Note. Pro.: Proportion

The study's findings reveal teachers' diverse perspectives on the suitable proportions for utilizing cartoons in educational materials tailored to different grade levels. Specifically, Grade 1 was associated with a proportion of 1:1, Grade 2 with a proportion of 1:2, Grade 3 with a proportion of 1:3, Grade 4 with a proportion of 1:4, and Grade 5 with a proportion of 1:5. Interestingly, Grade 6 exhibited a nuanced perspective, with teachers considering both 1:2 and 1:6 proportions as fitting for instructional purposes. These findings illuminate the intricate considerations that educators make when deciding how to integrate cartoons effectively into the pedagogical materials for distinct grade levels.

3.3 Teacher's Perception of Using Cartoon in Elementary Schools

Table 3. Teacher's perception of using cartoon in elementary schools

	Teaching						
	Grade 1 ($\bar{x}$, S.D)	Grade 2 ($\bar{x}$, S.D)	Grade 3 ($\bar{x}$, S.D)	Grade 4 ($\bar{x}$, S.D)	Grade 5 ($\bar{x}$, S.D)	Grade 6 ($\bar{x}$, S.D)	Average
Woman cartoon	4.21, 0.78	4.05, 0.77	4.01, 0.78	3.87, 0.84	3.78, 0.93	3.81, 0.96	3.96, 0.73
Man cartoon	4.27, 0.73	4.17, 0.71	4.05, 0.77	3.92, 0.82	3.92, 0.95	3.91, 0.97	4.04, 0.71
Giraffe cartoon	4.32, 0.65	4.26, 0.63	4.19, 0.67	4.01, 0.78	3.95, 0.90	3.90, 0.97	4.10, 0.64
Elephant cartoon	4.22, 0.75	4.19, 0.79	4.08, 0.82	3.97, 0.84	3.87, 0.96	3.87, 0.97	4.03, 0.77
Car cartoon	4.27, 0.73	4.19, 0.76	4.14, 0.75	3.95, 0.84	3.92, 0.94	3.90, 0.97	4.06, 0.73
Tree cartoon	4.21, 0.83	4.15, 0.76	4.06, 0.78	3.97, 0.81	3.95, 0.94	3.91, 0.94	4.04, 0.74
Average	4.25, 0.74	4.16, 0.73	4.08, 0.76	3.94, 0.82	3.89, 0.93	3.88, 0.96	4.03, 0.72

The results of the study illustrate a highly favorable perception among teachers regarding the use of cartoons in elementary school instruction (Mean, $\bar{x}$ = 4.03, Standard Deviation, S.D = 0.72). In greater detail, all of the exemplar cartoons received consistently high ratings, including the woman cartoon ($\bar{x}$ = 3.96, S.D = 0.73), the man cartoon ($\bar{x}$ = 4.04, S.D = 0.71), the giraffe cartoon ($\bar{x}$ = 4.10, S.D = 0.64), the elephant cartoon ($\bar{x}$ = 4.03, S.D = 0.77), the car cartoon ($\bar{x}$ = 4.06, S.D = 0.73), and the tree cartoon ($\bar{x}$ = 4.04, S.D = 0.74). Furthermore, teachers perceived cartoons as effective tools for teaching elementary school students across various grade levels. The perceptions were notably positive for Grade 1 ($\bar{x}$ = 4.25, S.D = 0.74), Grade 2 ($\bar{x}$ = 4.16, S.D = 0.73), Grade 3 ($\bar{x}$ = 4.08, S.D = 0.76), Grade 4 ($\bar{x}$ = 3.84, S.D = 0.82), Grade 5 ($\bar{x}$ = 3.89, S.D = 0.93), Grade 2 ($\bar{x}$ = 4.06, S.D = 0.73), and Grade 6 ($\bar{x}$ = 3.88, S.D = 0.96).

These findings suggest that teachers view cartoons as highly valuable instructional tools, with their positive perceptions extending across a range of grade levels within the elementary school context. The consistently high ratings for both the appropriateness of cartoons and their effectiveness in teaching underscore the potential of integrating this visual medium into the educational landscape. This positive perception implies that cartoons can serve as a pedagogical resource that resonates with educators and has the potential to enhance the quality of elementary school instruction, fostering engaging and effective learning experiences for students.

4. Discussion and Conclusion

The results of the study unequivocally demonstrate that participants hold a positive perception of cartoons as highly effective tools for teaching primary school students. These findings align with prior research, which has

consistently shown that teachers have a strong belief in the utility of cartoons within their elementary school classrooms (e.g., İbili & Sahin, 2016; Khalid, Meeran, & Halim, 2010; Turan, 2014). This widespread endorsement of cartoons in the educational context can be attributed to several compelling reasons. First and foremost, cartoons possess an inherent ability to captivate and sustain young learners' attention. Their vibrant visuals, engaging narratives, and imaginative characters serve as powerful magnets for student engagement, making the learning experience both enjoyable and memorable. Furthermore, cartoons simplify complex concepts, breaking them down into digestible, visually intuitive segments that are particularly well-suited to the cognitive development of elementary school students. Secondly, cartoons facilitate active participation and interaction among students. They encourage critical thinking, problem-solving, and discussion, fostering a collaborative learning environment. By prompting students to analyze visual cues, interpret storylines, and discuss their observations, cartoons stimulate cognitive and social development. Moreover, cartoons transcend language barriers, making them an inclusive and accessible teaching tool in diverse classrooms. They accommodate varying learning styles, ensuring that visual learners, in particular, benefit from a well-rounded educational experience.

Moreover, the study's findings reveal an interesting nuance—teachers exhibited a preference for different proportions of cartoons when teaching students at various elementary school grade levels. Notably, it appears that as students' progress to higher grade levels, the cartoons employed tend to be proportionally smaller in size. This observation aligns with the understanding that older students may benefit from a more nuanced and mature approach to visual aids in their learning process. Kaur (2021) pointed out the proportion of cartoons in designing classroom materials is a pivotal consideration. This is because the appropriate use of cartoon proportions can profoundly impact the learning experience. A well-balanced integration of cartoons into teaching materials can enhance comprehension, engagement, and retention of educational content. Moreover, it enables educators to cater to the specific developmental needs and cognitive abilities of students at different grade levels. By recognizing the significance of proportion in cartoon usage, educators can tailor their instructional materials effectively, ensuring that they align with the evolving learning requirements of their students, thus optimizing the educational experience in elementary school classrooms.

In conclusion, the primary objective of this study was to investigate teachers' perceptions regarding the appropriate proportions of cartoons for teaching elementary school students in various grade levels. The results reveal distinct preferences among teachers for different cartoon proportions corresponding to the specific grade levels. Notably, larger cartoon scales were favored for the early grades, such as Grade 1 and Grade 2, while smaller scales were preferred for older students in Grades 4, 5, and 6. Furthermore, teachers collectively perceive cartoons as highly effective tools for designing learning materials tailored to their elementary school classes. The findings of this study provide valuable insights for the development of educational materials that align with teachers' preferences and, consequently, hold the potential to enhance the overall quality of elementary school instruction.

5. Recommendations and Limitations

In light of the findings, several recommendations can be made to enhance the effective integration of cartoons into elementary school instruction. First and foremost, educators and instructional material designers should recognize the value of tailoring cartoon proportions to specific grade levels. To this end, collaboration between teachers and designers can lead to the development of visually engaging and pedagogically effective materials that cater to the unique needs of students at various stages of their elementary education. Furthermore, educational institutions should invest in professional development opportunities for teachers, offering training programs that delve into the creative and strategic use of cartoons as teaching tools. Such initiatives can equip educators with the skills and insights necessary to harness the full potential of cartoons for enhancing student engagement and comprehension.

While this study sheds light on teachers' perceptions of cartoon proportions in elementary school instruction, it is important to acknowledge its limitations. Firstly, the sample was specific to the Thai educational context, and caution should be exercised when generalizing the findings to other regions or educational systems. Additionally, the study relied on self-reporting from teachers, potentially introducing social desirability bias, as participants may have provided responses they deemed socially acceptable. Furthermore, the research primarily explored teachers' preferences and perceptions, leaving room for future investigations into the direct impact of different cartoon proportions on student learning outcomes. Finally, the study did not account for external variables such as classroom dynamics, teaching methodologies, or students' individual learning preferences, which can also influence the effectiveness of using cartoons in instruction.

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Informed consent

Obtained.

Ethics approval

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Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.