

## The Effect of Using Quiet Book Media on Improving Personal Hygiene Skills in Children with Intellectual Disabilities

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### ABSTRACT

Children with intellectual disabilities experience cognitive limitations that affect their ability to perform self-care tasks, including maintaining personal hygiene. This study aims to analyze the effect of using quiet book media on improving personal hygiene skills among children with intellectual disabilities at SLB C and C1 Yakult Purwokerto. A pre-experimental design with a one-group pretest-posttest approach and a quantitative method was used. Data were analyzed using the Wilcoxon Signed Rank Test. A total of 30 students were selected through total sampling. Data were collected using questionnaires and observation sheets. The results showed a significant improvement in personal hygiene skills after the intervention, with a p-value of <0.001. The quiet book media proved effective in enhancing children's behavioral skills in self-care. Therefore, this media can serve as a practical alternative learning tool to support the independence of children with intellectual disabilities, particularly in fulfilling personal care needs.

**Keywords:** Personal Hygiene, Quiet Book Media, Tunagrahita Children

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### INTRODUCTION

Children with special needs are those who differ from other typically developing children in their growth and developmental processes, as well as in their readiness in terms of mental, physical, intellectual, social, and emotional regulation. This broad category includes individuals with intellectual disabilities, physical disabilities, hearing impairments, visual impairments, speech impairments, and emotional or behavioral disorders (13).

Children with intellectual disabilities are characterized by intellectual and mental development that is significantly below average. These limitations cause them to experience obstacles in social, academic, and communication tasks. Intellectual impairments and limited potential among children with intellectual disabilities

may also hinder their ability to help and care for themselves (19).

Intellectual disability is one of the conditions found in children with below-average intelligence, often marked by limitations in performing daily activities (18). One of the major challenges faced by children with intellectual disabilities in their daily lives is their ability to maintain self-care and personal hygiene such as keeping their body clean, washing hands, cleaning their face and feet, brushing teeth, urinating, eating and drinking independently, dressing themselves, and interacting socially with others (10).

According to data from the World Health Organization (WHO), the number of individuals worldwide with mental developmental disorders is estimated to

exceed 450 million. These disorders account for approximately 12% of the global disease burden, and the figure is projected to rise to 15% by 2020 (4). Furthermore, a survey conducted by UNICEF in collaboration with the University of Wisconsin in 2008 found that 52.4% of children aged 6–9 years who were still attending school experienced difficulties performing daily activities independently due to disabilities.

The Indonesian Ministry of Education and Culture (Kemendikbud) recorded that 69,403 children in Indonesia have intellectual disabilities. Data from the Basic Health Research 2018 also revealed that 3.3% of children aged 5–17 years in Indonesia are categorized as persons with disabilities. Meanwhile, data from the Center for Data and Information Technology (Pusdatin) of the Ministry of Education and Culture in 2021 indicated that there were 530 children with autism in Central Java Province (14). In Banyumas Regency, the number of individuals with mental retardation during the 2020–2024 period reached 2,630, reflecting an increasing need for special education services in the region.

Children with special needs generally exhibit greater limitations in self-care skills compared to typically developing children (13). Self-care refers to an individual's ability to perform daily activities independently without relying on assistance from others. Children with intellectual disabilities often face difficulties in regulating themselves, which leads to dependence on others to complete routine daily tasks (16).

Unhealthy behaviors may increase the risk of illness due to poor personal hygiene and can lead to a higher likelihood of social isolation within the community (6). Personal hygiene is a

fundamental aspect of maintaining physical health and preventing disease, encompassing both physical and psychological well-being for oneself and others. It includes cleanliness and care of the head, hair, eyes, nose, ears, nails, skin, hands, feet, and genital areas (15). Findings from Sriasih et al., (2023) revealed that self-care activities are among the most essential yet most challenging needs for children with special needs to perform independently (13). One of the key components of self-care in daily activities is personal hygiene (10).

Research by Sri Wulan Sari et al. (2022) showed that most children with intellectual disabilities aged 9–17 years had low levels of independence in self-care (7). Approximately 38.6% of children with intellectual disabilities in Banyumas Regency, Central Java, were able to perform self-care independently in more than two aspects, while the rest still required assistance. According to Tonara et al. (2023), many children with intellectual disabilities do not receive sufficient attention from their families because parents must devote extra time and special care to their children, often perceiving hygiene as a secondary concern (17).

Interviews conducted on Friday, October 4, with the principal of SLB C and C1 Yakut Purwokerto revealed that students with intellectual disabilities were only taught basic aspects of personal hygiene, such as handwashing and basic self-care, without the use of instructional media. The school had established competency targets for students with intellectual disabilities; however, in practice, many older students who should have achieved self-care independence still demonstrated low ability in these areas.

Preliminary interviews with several parents of children with intellectual

disabilities regarding personal hygiene at home showed that 85% of the children still required parental assistance for tasks such as toothbrushing and changing clothes. On October 7–8, 2024, further interviews with a teacher responsible for student activities revealed that there were 201 students with intellectual disabilities across elementary to high school levels.

As part of the preliminary study, the researcher distributed 20 observation questionnaires to students in grades VII and IX to obtain an initial overview of their personal hygiene abilities. The findings showed that many students across mild, moderate, and severe disability categories continued to demonstrate limited independence in performing basic hygiene tasks such as brushing their teeth and changing clothes after bathing. These preliminary results highlight the need for interventions aimed at improving personal hygiene skills among students with intellectual disabilities.

The results of these interviews emphasize the crucial role of personal hygiene in improving the quality of life of individuals, particularly those with special needs such as children with intellectual disabilities. Personal hygiene is not only related to physical cleanliness but also contributes to self-confidence, social acceptance, and disease prevention. Proper hygiene practices can foster independence and encourage social engagement.

Therefore, nurses play an essential role in delivering structured education and hands on hygiene training as part of promotive and preventive interventions. In addition to offering guidance and support to parents, nurses are responsible for teaching and assisting children with special needs in performing self-care activities, including maintaining

personal hygiene, using established theoretical approaches (2).

Based on these considerations, this study aims to explore the effectiveness of Quiet Book media as a health education tool to improve personal hygiene skills among children with intellectual disabilities. The Quiet Book is designed using a combination of cotton and flannel fabric in contrasting colors, complemented by three-dimensional images and symbols. Its tactile and interactive features are intentionally developed to address the challenges identified in the preliminary study, where many students at SLB C and C1 Yakut Purwokerto still struggled with basic hygiene tasks such as brushing their teeth and changing clothes.

This approach aims to attract the interest and attention of children with intellectual disabilities in learning hygiene materials while simultaneously enhancing their skills through interactive activities within the medium. According to the National Education Association (NEA), manipulable objects that can be seen, heard, read, or discussed when used appropriately can enhance the effectiveness of instructional programs (8).

Research by Ramadhani & Sudarsini (2018) also demonstrated that the Quiet Book is well-suited to the characteristics of children with intellectual disabilities and is designed to help develop their practical and cognitive skills, enabling them to participate in learning more effectively (5). This medium has proven to be an effective educational tool for improving both individual and group learning outcomes among children with intellectual disabilities. Based on this rationale, the present study seeks to further investigate “The Effect of Quiet Book Media on Improving Personal Hygiene Skills in Children with

Intellectual Disabilities at SLB C and C1 Yakut Purwokerto.”

## METHODS

This study employed a quantitative approach with a pre-experimental design of the one-group pretest–posttest type, without a control group. The research was conducted at SLB C and C1 Yakut Purwokerto with a total of 36 respondents, consisting of students from grade VII (11 students), grade VIII (12 students), and grade IX (13 students). Total sampling was used because the population of junior high school students was fewer than 100 and met the inclusion criteria. Respondents were selected based on specific observable limitations in personal hygiene skills, including difficulty brushing teeth, washing hands, changing clothes independently, and maintaining cleanliness after bathing. Students who required partial or full assistance in at least two of these tasks were included as subjects.

The instrument used in this study was an adapted version of the Autism Child Module Score Sheet developed by Daniel & Sukanto (2021) (1). This instrument was designed to measure fine motor and cognitive skills based on indicators adjusted to the students’ specific needs. Although originally designed to assess fine motor and cognitive abilities in children with autism, the instrument was adapted to evaluate personal hygiene skills in children with intellectual disabilities by focusing on four domains: toothbrushing, handwashing, changing clothes, and maintaining cleanliness after bathing.

The adapted sheet consisted of 12 items, each scored on a 4-point scale (0 =

unable to perform, 1 = requires full assistance, 2 = requires partial assistance, 3 = independent). The instrument included operational definitions for each item; for example, “toothbrushing” involved preparing the toothbrush, applying toothpaste, brushing adequately, rinsing, and cleaning up afterward.

Observers completed the score sheet while directly watching students perform each task. Two expert validators assessed the content validity of the adapted instrument, and the reliability test yielded a Cronbach’s Alpha value of 0.812, indicating high internal consistency. An inter-rater reliability test was also conducted to ensure consistent scoring between experts and raters. Data collection procedures included structured observation sheets and questionnaires.

Data analysis was performed quantitatively using the Shapiro Wilk normality. As the data were not normally distributed, the Wilcoxon Signed-Rank Test was used for hypothesis testing. This research adhered to ethical guidelines approved by the Health Research Ethics Committee of Universitas Muhammadiyah Purwokerto (KEPK/UMP/46/VII/2024). All research procedures ensured the protection of participants’ rights, including obtaining informed consent and maintaining the confidentiality of respondents’ data.

## RESULTS AND DISCUSSION

This study was conducted at SLB C and C1 Yakut Purwokerto involving 30 respondents who met the inclusion criteria as research samples. The characteristics of the respondents included age, gender, and grade level.

Table 1. Respondent Characteristics

No	Respondent Characteristics	Frequency (n)	Percentage (%)
1	Age of Respondent :		
	12 Years	5	16.7
	13 Years	2	6.7
	14 Years	14	46.7
	15 Years	9	30.0
	Total	30	100
2	Gender:		
	Male	15	50.0
	Female	15	50.0
	Total	30	100
3	Grade :		
	VII	8	26.7
	VIII	10	33.3
	IX	12	40.0
	Total	30	100
4	Birth Order		
	First Child	15	50.0
	Second Child	8	26.7
	Third Child	6	20.0
	Fourth Child	1	3.3
	Total	30	100

Table 2. Pre-Test and Post-Test Results of Personal Hygiene Using Quiet Book Media

Variable	Grade VII		Grade VIII		Grade IX	
	<i>Pre-test</i>	<i>Post-test</i>	<i>Pre-test</i>	<i>Post-test</i>	<i>Pre-test</i>	<i>Post-test</i>
Skills						
<i>Mean</i>	29.00	40.38	30.00	45.10	31.58	47.75
<i>Std. Deviation</i>	0.906	3.116	1.011	1.703	1.184	1.360
<i>Minimum</i>	24	21	23	32	24	35
<i>Maximum</i>	32	47	34	50	36	52

Based on Table 1, the frequency distribution of respondents by age shows that the majority were 14 years old (46.7%). The distribution by gender indicates that male and female respondents were equal in number (50.0% each). Meanwhile, the distribution based on grade level shows that most respondents were in grade IX, totaling 12 students (40.0%). Furthermore, the table also shows that most children were first-borns, accounting for 50.0% of the total respondents.

Based on Table 2, which presents the frequency distribution of skill scores among children with intellectual disabilities, a comparison was made between grade VII, grade VIII, and grade IX students. Before the intervention, grade VII students had a mean score of 29.00, with a standard deviation of 0.906, a minimum score of 24, and a maximum score of 32. After the intervention, the mean score increased to 40.38, with a standard deviation of 3.116, a minimum score of 21, and a maximum score of 47.

For grade VIII, the mean score before the intervention was 30.00, with a standard deviation of 1.011, a minimum score of 23, and a maximum score of 34. After the intervention, the mean skill score improved to 45.10, with a standard deviation of 1.703, a minimum score of 32, and a maximum score of 50.

Similarly, for grade IX students, the mean score before the intervention was 31.58, with a standard deviation of 1.184, a minimum score of 24, and a maximum score of 36. After the intervention, the mean score increased to 47.75, with a standard deviation of 1.360, a minimum score of 35, and a maximum score of 52. These findings demonstrate a consistent improvement across all grade levels after the implementation of Quiet Book media, indicating its effectiveness in enhancing personal hygiene skills among children with intellectual disabilities.

Based on Table 3, which presents the distribution of respondents' skill levels in the pre-test and post-test phases, it was found that in grade VII, before the intervention, 8 respondents were categorized as less skilled. After the intervention, 4 respondents were classified as fairly skilled and 4 respondents as skilled. In grade VIII, before the intervention, 10 respondents

were categorized as less skilled. After the intervention, 1 respondent remained in the less skilled category, 2 respondents were classified as fairly skilled, and 7 respondents showed improvement and were categorized as skilled. In grade IX, before the intervention, 9 respondents were categorized as less skilled and 3 respondents as fairly skilled.

After the intervention, 1 respondent remained fairly skilled, while 11 respondents showed improvement and were categorized as skilled. These results demonstrate a consistent increase in personal hygiene skills across all grade levels following the implementation of the Quiet Book media, suggesting that the intervention effectively enhanced students' ability to perform personal hygiene independently.

The results of the normality test using the Shapiro–Wilk method in Table 4 indicate that for grade VII, the pre-test value of 0.327 ( $> 0.05$ ) suggests that the data were normally distributed, while the post-test value of 0.008 ( $< 0.05$ ) indicates a non-normal distribution. For grade VIII, the pre-test value of 0.315 ( $> 0.05$ ) also shows a normal distribution, whereas the post-test value of 0.027 ( $< 0.05$ ) indicates that the data were not normally distributed. In grade IX, the

Table 3. Frequency Distribution of Respondents' Skill Levels in Pre-Test and Post-Test Using Quiet Book Media

Category	Grade VII				Grade VIII				Grade IX			
	Pre-test		Post-test		Pre-test		Post-test		Pre-post		Post-test	
	n	%	n	%	n	%	n	%	N	%	n	%
Less Skill	5	62.5	1	12.5	6	60.0	1	10.0	7	58,3	2	16.7
Fairly Skill	2	25.0	4	50.0	2	20.0	1	10.0	3	25.0	2	16.7
Good Skill	1	12.5	3	37.5	2	20.0	8	80.0	2	16.7	8	66.7
<b>Total</b>	<b>8</b>	<b>100</b>	<b>8</b>	<b>100</b>	<b>10</b>	<b>100</b>	<b>10</b>	<b>100</b>	<b>12</b>	<b>100</b>	<b>12</b>	<b>100</b>

Table 4. Normality Test Results of Skill Level After Intervention

Variable	Sig	Explanation
<b>Grade VII</b>		
<i>Pre-test</i>	0.327	Normal Distributed
<i>Post-test</i>	0.008	Not Normally Distributed
<b>Grade VIII</b>		
<i>Pre-test</i>	0.315	Normal Distributed
<i>Post-test</i>	0.027	Normal Distributed
<b>Grade IX</b>		
<i>Pre-test</i>	0.053	Normal Distributed
<i>Post-test</i>	0.004	Not Normally Distributed

Table 5. The Effect of Using Quite Book Media on Personal Hygiene

Variable	Intervention	N	Z-Score	p-value
Respondent Skill Level				
<i>Pre-test</i>	Use of			
<i>Post-test</i>	<i>Quietbook</i>	30	4.748	0,000

pre-test value of 0.053 ( $> 0.05$ ) demonstrates a normal distribution, while the post-test value of 0.004 ( $< 0.05$ ) indicates a non-normal distribution.

Based on these results, it can be concluded that the post-test data in all classes were not normally distributed; therefore, the overall data in this study did not meet the assumption of normality. Consequently, a non-parametric test (Wilcoxon Signed-Rank Test) was applied to determine the effect of Quiet Book media on personal hygiene improvement.

Based on the bivariate analysis results presented in Table 5, the p-value was 0.000 ( $\leq 0.05$ ), indicating that the null hypothesis ( $H_0$ ) was rejected. Therefore, it can be concluded that there was a significant effect of using Quiet Book media on improving personal hygiene behavior skills among children with intellectual disabilities at SLB C and C1 Yakut Purwokerto.

The classification of age refers to the guidelines of the Ministry of Health of

the Republic of Indonesia in the Indonesia Health Profile (2022), which states that the age range of 12–16 years is categorized as early adolescence, 6–11 years as childhood, and 17–25 years as late adolescence (3). According to the Ministry of Health, school-aged children are defined as those older than six years but younger than eighteen years. During this period, children go through two major stages of life childhood and adolescence. In the school phase, children experience significant psychosocial development, including enhanced interaction skills, achievement motivation, and creative expression. They also begin to develop an industry pattern, or a sense of productivity that helps them overcome feelings of inferiority.

Most respondents in this study were of school age and diagnosed with intellectual disabilities. At this developmental stage, children with intellectual disabilities possess the potential to perform daily self-care activities, though they still require structured training. Referring to Orem's Nursing Theory, they fall under the

partially compensatory nursing system, which implies that children are not yet fully independent and continue to need assistance from nurses and families in fulfilling their basic needs. The use of Quiet Book learning media as an intervention in the school environment proved effective in enhancing the children's ability to perform self-care more independently.

School age is a critical period in a child's growth and development. At this stage, children begin to express individuality and gradually learn to perform self-care activities independently. Research by Ulfatulsholihat (2010) revealed that children with intellectual disabilities possess a strong desire to live independently without depending entirely on parents or others. Furthermore, Buyan (2004) emphasized the importance of teaching self-care skills within schools. To develop these abilities, individuals require appropriate information, media, and guidance.

This study involved three grade levels VII, VIII, and IX, selected according to predetermined inclusion criteria. The grade level played an essential role in ensuring the smooth implementation of the study. In grade VII, most students exhibited lower levels of concentration and responsiveness to learning, with some demonstrating uncontrolled behavior, requiring parental assistance to maintain a conducive learning atmosphere. In contrast, students in grades VIII and IX were generally more capable of following instructions and engaging with the learning material according to standard procedures, although some still required additional supervision. These differences in behavior during the intervention phase are presumed to be influenced by age variations across grade levels, which affect students' maturity and their

capacity to engage effectively in the learning process.

The findings of this study show that the number of male and female students in each class was proportionally balanced. According to Sari et al. (2024), male and female students with intellectual disabilities demonstrate similar levels of understanding in problem-solving and decision-making processes (9). However, this result is not entirely consistent with the findings of S. Sari et al (2019), which indicated that female students tend to achieve higher academic performance compared to their male counterparts (8).

The results of this study showed that 15 respondents were first-born children. While this study did not statistically analyze the relationship between birth order and personal hygiene scores, the finding may provide contextual insight into parental readiness. Parents who are caring for a child with intellectual disabilities for the first time often have limited experience in teaching daily self-care routines, which may influence the development of personal hygiene skills. This result is supported by the study of Puspita (2016), which highlights that parental involvement plays a crucial role in fostering independence among children with intellectual disabilities.

Supporting this, Alfita (2017) explained that independence is not an innate ability but a skill that must be taught gradually from early childhood through consistent practice and parental support. These studies highlight the importance of providing parents especially first-time caregivers with appropriate education and structured tools to assist their children in developing self-care abilities. In this context, quiet book media can serve as a practical educational aid that helps parents guide their children through step-by-step hygiene routines in

a more interactive and structured manner.

Although this study did not statistically analyze the relationship between birth order and personal hygiene performance, observations suggested that children of first-time caregivers often showed lower levels of personal hygiene skills. This may be related to parents' limited experience and understanding of how to introduce and reinforce hygiene routines from an early age. Supporting this view, Alfita (2017) explained that independence is not an innate trait or a skill that emerges spontaneously; rather, it must be taught gradually from early childhood. Through consistent practice and parental guidance, children can develop confidence, self-reliance, and the ability to carry out daily tasks independently.

This aligns with findings from (Sari & Santy, 2017), who noted that family support plays an important role in shaping the personal hygiene abilities of children with intellectual disabilities, as well as Ramawati et al. (2018), who emphasized that both internal and external parental factors influence a child's capacity to perform self-care tasks (10,6). Therefore, providing structured educational tools such as quiet book media can assist parents, particularly first-time caregivers, in teaching hygiene routines more effectively.

Based on the findings and data presented in Table 3 there were clear differences observed among grades VII, VIII, and IX regarding skill levels before and after the intervention. In grade VII, before the intervention, the majority of respondents (100%) demonstrated low levels of personal hygiene skills (less skilled category). After the intervention, 50.0% of respondents were categorized as fairly skilled and the remaining 50.0% as

skilled. In grade VIII, prior to the intervention, all respondents (100%) were categorized as less skilled.

After the intervention, 10.0% of respondents remained less skilled, 20.0% were fairly skilled, and 70.0% showed improvement, achieving the skilled category. Meanwhile, in grade IX, before the intervention, the majority of respondents (75.0%) were categorized as less skilled. After the intervention, a significant improvement was observed, with 91.7% of respondents classified as skilled.

These results demonstrate consistent improvement in the personal hygiene skill levels of students across all grade levels following the implementation of Quiet Book media. The difference in skill levels among grades VII, VIII, and IX before and after the intervention was evident from the variations in mean scores. The mean skill score before the intervention was 32.58, with a minimum score of 23 and a maximum of 38, whereas after the intervention, the mean score increased to 52.45, with a minimum of 46 and a maximum of 55.

This improvement aligns with the fundamental learning characteristics of children with intellectual disabilities, who typically benefit from concrete, visual, and repetitive instructional methods. The Quiet Book's manipulative and three-dimensional features provide tangible learning experiences that help students understand personal hygiene tasks step-by-step. Its sensory elements support better attention and memory retention, while the structured sequencing within the pages allows for repeated practice and modeling two essential strategies for developing independence in self-care. Therefore, the Quiet Book media effectively responds to the specific learning needs of children with intellectual disabilities, contributing

to the observed enhancement in their personal hygiene skills.

The variation in improvement across grades can be attributed to differences in age and developmental stages among students, which affect the learning process. It can therefore be concluded that the age stage plays a significant role in the ability to receive and process information during learning. Fundamentally, children with intellectual disabilities have cognitive limitations and memory delays, requiring more time to comprehend new learning materials and acquire new skills.

Therefore, it can be concluded that there was a significant effect of using Quiet Book media on improving personal hygiene behavior skills among children with intellectual disabilities at SLB C and C1 Yakut Purwokerto. The increase in scores between the pre-test and post-test phases further supports this finding. Based on these differences, it can be concluded that Quiet Book media is effective in enhancing personal hygiene skills among children with intellectual disabilities.

In this study, the Quiet Book was used as an educational medium to teach self-care through engaging and visually appealing designs. The colorful and interactive elements of the Quiet Book captured the students' interest and enthusiasm, allowing them to learn and play simultaneously. This interactive learning process encouraged students to better absorb and understand the intended educational messages.

The findings of this study are consistent with those of Ramadhani & Sudarsini (2018), who reported that the Quiet Book is a learning medium well-suited to the characteristics of children with intellectual disabilities (5). The medium was designed to facilitate skill

development and to help students participate more effectively in the learning process. The use of Quiet Book media was proven to be effective in improving the abilities of children with intellectual disabilities, both in individual and group learning contexts. This is supported by the statistical results of the Wilcoxon Signed-Rank Test, which showed a p-value of 0.000, indicating a significant difference before and after the intervention.

Overall, the use of Quiet Book media has a positive impact on increasing the awareness and ability of children with intellectual disabilities to perform self-care activities independently, thereby supporting their overall functional and adaptive development.

## LIMITATIONS

This study had several limitations. Some respondents demonstrated a lack of focus during the learning process and required parental assistance to ensure that the intervention sessions ran smoothly. In addition, differences in comprehension levels among classes affected the students' ability to absorb the material, resulting in variations in the duration of intervention sessions across grade levels.

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## CONCLUSION

Based on the results of this study, it can be concluded that the use of Quiet Book media has a significant effect on improving personal hygiene behavior skills among children with intellectual disabilities at SLB C and C1 Yakut Purwokerto. This conclusion is supported by the differences in pre-test and post-test scores after the intervention, which demonstrated an increase in the respondents' self-care abilities. The Quiet Book has proven to be an effective and interactive learning tool that aligns well with the characteristics and learning needs of children with intellectual disabilities.

## RECOMMENDATIONS

The Quiet Book is recommended to be used continuously by teachers and parents as an enjoyable and easily understandable alternative learning medium for children with intellectual disabilities. It is also suggested that the content and design of the Quiet Book be adjusted to suit the specific needs and comprehension levels of each child. Future research is encouraged to involve a larger number of respondents and to compare the effectiveness of this medium with other learning methods in order to obtain more comprehensive results.

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