<Press Release>

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ISS BERD Joint Research Project "JLSCP"

<Overview Report> Results of "Japanese Longitudinal Study of Children and Parents (JLSCP) 2022"

The number of children who do not know how to study effectively is increasing, accounting for about 70 percent of the children taking part in the survey

- The results revealed that "knowing how to study" can improve children's motivation for learning and academic achievements -

The Institute of Social Science, the University of Tokyo (Location: Bunkyo-ku, Tokyo; President: Teruo Fujii) and the Benesse Educational Research & Development Institute ("BERD") launched a joint research project to clarify the present aspects of "Everyday Life and Learning of Children" in 2014. The BERD is an in-house think tank of Benesse Corporation (Headquarters: Okayama City, Okayama Prefecture; Representative Director and President: Hitoshi Kobayashi). The project has been conducting a longitudinal survey on approximately 21,000 parent-child pairs for eight years since 2015. The samples are made up of children in the 1st through 12th grades (i.e., children in elementary school: 1st to 6th graders; junior high school: 7th to 9th graders; senior high school: 10th to 12th graders) and their parents.

In the <u>Press Release of Survey Results last year (issued on April 20, 2022)</u>, we reported that more than 50 % of children answered, "I do not feel like studying," indicating that their motivation for learning was waning. The same trend was observed this year. Children's motivation for learning seemed to continue to decrease. Therefore, to find solutions to enhance children's motivation for learning, we analyzed survey data focusing on whether children "know how to study." The number of children who "do not know how to study effectively" increased between 2019 and 2022, accounting for about 70 % of the surveyed children. We examined the analysis results from various viewpoints to identify the effects of "knowing how to study." We hope this report will help parents, child-care practitioners, educators in seeking practical solutions to ensure children's quality learning.

The survey results are summarized as follows:

1. The number of children who answered "I don't know how to study effectively" increased over the past four years

The number of children who affirmatively answered ("strongly agree" + "somewhat agree") "I don't know how to study effectively" increased between 2019 and 2022, accounting for about 70 % of the surveyed children.

2. "Knowing how to study" is associated with "motivation for learning" and "academic achievements"

The factor of "knowing how to study" is associated with the factors of "motivation for learning" and "academic achievements." In particular, a strong correlation was confirmed between "knowing how to study" and "academic achievement."

3. Regarding changes in children's "knowing how to study" between 2021 and 2022, the "shifting to 'know'" group accounted for 12.5 % of the surveyed children

After conducting continuous observation between 2021 and 2022 regarding children who answered, "I don't know how to study effectively," we confirmed that some children shifted their answers from "I don't know how to study" to "I know how to study." As a result, the "Shifting to Do Know" group accounted for 12.5 % of the surveyed children.

4. When children shifted to "I know how to study," their "motivation for learning" also improved

The "Shifting to 'Do Know" group showed improved motivation for learning in 2022.

5. When children shifted to "I know how to study," their "academic achievements" also improved

The "Shifting to Do Know" group showed higher academic achievements in 2022.

6. Children's "knowing how to study" also correlates with their logical thinking and persistence

Most children who "Do Know How to Study" showed better logical thinking and persistence.

7. Children who know how to study can leverage various studying strategies

The group of "Knowing how to study" were trying various studying strategies (e.g., self-regulation, study planning, monitoring) than the group of "do not know how to study."

< Survey results >

1. The number of children who answered "I don't know how to study effectively" increased over the past four years

The number of children who affirmatively answered ("strongly agree" + "somewhat agree") "I don't know how to study effectively" increased between 2019 and 2022, accounting for about 70 % of the surveyed children. This result indicates that more children struggle with their study methods.



Figure 1: Changes in children's feelings about knowing how to study

*The above shows the percentage of children who responded "strongly agree" and "somewhat agree." This question item was not used in the 2015 survey.

*The percentages of "Overall (4th-12th grades)" were calculated by placing equal weighting on "4th-6th graders," "7th-9th graders," and "10th-12th graders."

*For the number of samples for each grade, please see the summary table at the end of this article.

The overall percentage of affirmative answers among children in 4th through 12th grades regarding "I don't know how to study effectively" increased by 10.3 points over the past four years, accounting for 57.2 % in 2019, 59.6 % in 2020, 61.5% in 2021, and 67.5% in 2022 against the surveyed children. This trend indicates that an increasing number of children face problems in knowing how to study.

After analyzing the survey data by grade, the percentage of children's affirmative answers increased in the order of educational stage; 61.1% for 4th-6th graders, 68.1% for 7th-9th graders, and 73.2% for 10th-12th graders. In addition, there is a significant

difference of 12.1 points between 4th-6th graders and 10th-12th graders. More than 70% of children in 10th-12th grades face problems in knowing how to study.

Regarding the increase in children's affirmative answers between 2019 and 2022, lower educational stages showed higher increase. More precisely, children's affirmative answers increased by 18.5 points for 4th-6th graders, 8.1 points for 7th-9th graders, and 4.5 points for 10th-12th graders. More children in elementary school seem to face problems in knowing how to study.

2. "Knowing how to study" is associated with "motivation for learning" and "academic achievements"

As a result of our analysis, we confirmed that the factor of "knowing how to study effectively (studying strategies)" has a positive correlation with the factor of "motivation for learning." In other words, children with a better understanding of how to study also have better motivation for learning. In addition, although "knowing how to study" is associated with both "motivation for learning" and "academic achievements," a higher correlation was confirmed between "knowing how to study" and "academic achievements," rather than the factors of "motivation for learning" and "study hours."

Figure 2: Correlations (correlation coefficients) between "knowing how to study" and "motivation for learning/ study hours / academic achievements"



*The values above represent correlation coefficients, ranging from -1.0 (the highest degree of negative correlation) to 1.0 (the highest degree of positive correlation).

*"Knowing how to study" was assessed based on the answers to the question item "I don't know how to study effectively," using the four-point scale ranging from "1. strongly agree" to "4. strongly disagree."

*The degree of "motivation for learning" was assessed based on the answers to the question item "I do not feel like studying," using the four-point scale from "1. strongly agree" to "4. strongly disagree."

*The total "study hours" was calculated by aggregating the hours spent on "school assignments," "study at home," and "study at cram school" per day.

*The score of "academic achievements" was calculated using the average values ranging from 1(the lowest) to 5 (the highest) of four subjects (Japanese language, mathematics, science, and social studies) for children in 4th grade, and five subjects (Japanese language, mathematics, science, social studies, and English language) for children other than those in 4th grade.

*We analyzed the 2022 survey data with 3,664 samples of 4th-6th graders, 2,922 samples of 7th-9th graders, and 2,096 samples of 10th-12th graders.

*The value of "Overall (4th-12th grades)" were calculated by placing equal weighting on "4th-6th graders," "7th-9th graders," and "10th-12th graders."

We confirmed a moderate correlation between "knowing how to study" and "motivation for learning." Therefore, a better understanding of studying strategies can also have better motivation for learning. This trend was observed across all educational stages.

As a result of our analysis, we confirmed that the factor of "academic achievements" has the strongest correlation with "knowing how to study" followed by correlation with "motivation for learning." In contrast, there is only a weak correlation between the "academic achievements" and "study hours." This trend was observed across all educational stages. Therefore, it can be concluded that acquiring studying strategies may be more effective in achieving good academic achievements, rather than simply spending long hours studying.

It should be noted, however, that a correlation between "study hours" and "academic achievements" was strongest for 4th-6th graders and weakest for 10th-12th graders. Therefore, forming regular study habits can positively affect children's academic achievements in the early educational stages.

3. Regarding changes in children's status of "knowing how to study" bewtween 2021 and 2022, 12.5% of the children changed from "don't know" to "do know"

Among the children who answered "I don't know how to study effectively" in the 2021 survey, 12.5% shifted to "I know how to study" in the 2022 survey."



Figure 3: Changes in children's "knowing how to study" between 2021 and 2022

*Children were divided into two groups based on their answers to the question item "I don't know how to study effectively." One group is those who answered "Do not know how to study" (who chose "strongly agree" or "somewhat agree") and the other group is those who answered "Do know how to study" (who chose "somewhat disagree" or "strongly disagree").

*We conducted an analysis by tracking the data of 4th-11th graders starting from 2021 who became 5th-12th graders in 2022. The number of samples was 6,816 who participated in both the 2021 and 2022 surveys (excluding those whose answers were not available). The above percentages were calculated by placing equal weighting on "4th-6th graders," "7th-9th graders," and "10th-12th graders."

As a result of our analysis by tracking changes between 2021 and 2022 regarding the children who chose the answer "I don't know how to study effectively," we confirmed that the "Keep Not Knowing" group was predominant (47.4%), followed by the "Keep Knowing" group (20.6%). By adding them together, these two groups (showed no change since 2021) accounted for 68.0%.

In contrast, the "Shifting to Do Know" group accounted for 12.5%, while the "Shifting to Do Not Know" group accounted for 19.5%. Because older children are more likely to answer, "I don't know how to study effectively," the occurrence rate of the "Shifting to Do Not Know" group was high. It should be noted, however, that the "Shifting to Do Know" group still accounted for more than 10%.

4. Once children "know how to study," their "motivation for learning" also improved

Next, we examined the relationship between changes in the children's status of "knowing how to study" and "motivation for learning" between 2021 and 2022. The occurrence rate of

"improved learning motivation" was high among the "Shifting to Do Know" group. In contrast, the occurrence rate of "decreased learning motivation" was high among the "Shifting to Do Not Know" group. These results proved a correlation between children's know-how of studying and their motivation for learning.

Figure 4: Changes in children's motivation for learning between 2021 and 2022 (linking to changes in children's status of knowing how to study)



*For the factor of "knowing how to study," we divided the participant children into two groups based on their answers to the question item "I don't know how to study effectively." Namely, the group of "Do Not Know How to Study" (who chose "strongly agree" or "somewhat agree") and the group of "Do Know How to Study" (who chose "somewhat disagree" or "strongly disagree"). Then, we further divided these two groups into four groups based on their changes between 2021 and 2022.

For the factor of "motivation for learning," we divided the participant children into two groups based on their answers to the question item "I do not feel like studying." Namely, the "weak learning motivation" group (who chose "strongly agree" or "somewhat agree") and the "strong learning motivation" group (who chose "somewhat disagree" or "strongly disagree"). Then, we further divided these two groups into four groups based on their changes between 2021 and 2022.

*We conducted the analysis by tracking the data of 4th-11th graders starting from 2021 who became 5th-12th graders in 2022. The number of samples was 6,805 who participated in both the 2021 and 2022 surveys (excluding those whose answer were not available). The above shows percentages calculated by placing equal weighting on "4th-6th graders," "7th-9th graders," and "10th-12th graders."

After dividing and analyzing the participant children into four groups based on changes in their knowledge of how to study, we confirmed a correlation between changes in their "knowing how to study" and "motivation for learning."

The occurrence rate of "keeping strong learning motivation" was high among the "keep knowing" group. This result indicates that children who constantly know how to study can keep strong motivation for learning. In contrast, the occurrence rate of "keeping weak motivation" was high among the "keep not knowing" group.

Meanwhile, the occurrence rate of "improved learning motivation" was high among the "shifting to do knowing" group (meaning children who did not know how to study in 2021 but came to know how in 2022). In contrast, the occurrence rate of "decreased learning motivation" was high among the "shifting to do not know" group (meaning children who knew how to study in 2021 but did not know how in 2022).

5. Once children "know how to study," their "school performance" also improved

We examined the correlation between changes in children's status of "knowing how to study" and "academic achievements" between 2021 and 2022. The occurrence rate of "higher academic achievements" was high among the "shifting to do know" group. In contrast, the occurrence rate of "lower academic achievements" was high among the "shifting to do not know" group.

Figure 5: Changes in children's academic achievements between 2021 and 2022 (linking to changes in children's status of knowing how to study)



*Children's "academic achievements" were converted into deviation values, using the average values ranging from 1(the lowest) to 5 (the highest) of four subjects (Japanese language, mathematics, science, and social studies) for children in 4th grade, and five subjects (Japanese language, mathematics, science, social studies, and English language) for children other than those in 4th grade.

For 10th-12th graders, some did not take certain subjects. In such cases, the deviation value of "3" was assigned automatically. Changes in academic achievements were expressed by changes in deviation values confirmed in the 2022 survey (from the starting point (0) allocated in the 2021 survey). The four groups representing whether children know how to study were created in the same way as explained in Figure 3.

*The analysis was conducted by tracking the data of 4th-11th graders starting from 2021 who became 5th-12th graders in 2022. The number of samples was 6,551 who participated in both the 2021 and 2022 surveys (excluding those whose answers were not available). The above shows

values calculated by placing equal weight on "4th-6th graders," "7th-9th graders," and "10th-12th graders."

* ***p<0.001 (as a result of multiple comparisons)

After dividing the participant children into four groups based on changes in their knowing how to study and analyzing changes in their academic achievements (converted into deviation values) between 2021 and 2022, we confirmed that there was a correlation between changes in their "knowing how to study" and "academic results."

For the "Shifting to Know" group, the score of academic achievements increased by 1.8 points. In contrast, the score of academic achievements increased by 0.4 points for the "Keep Knowing" group, 0.2 points for the "Keep Not Knowing" group and decreased by 1.2 points for the "Shifting to Do Not Know" group. These results confirmed that once children started to know how to study their academic achievements improved, and when they did not know how to study their academic achievements deteriorated.

6. Children's "knowing how to study" also correlates with their logical thinking and persistence

When compared with the group of "Do not know how to study" (who chose "strongly agree" or "somewhat agree" to the question item "I don't know how to study effectively"), children in the group of "Do know how to study" (who chose "somewhat disagree" or "strongly disagree") were better at logical thinking and capable of making steady efforts to accomplish something, regardless their level of academic scores.

Figure 6: Children's logical thinking and persistence (linking to children's status of knowing how to study / academic achievements)



*We divided the participant children into two groups based on their answers to the question item "I don't know how to study effectively." That is the group of "Do Not Know How to Study" (who chose "strongly agree" or "somewhat agree") and the group of "Do Know How to Study" (who chose "somewhat disagree" or "strongly disagree").

The children's status of "knowing how to study" correlates not only with their academic achievements but also with various capabilities, such as logical thinking and persistence.

When asked about the capability of logical thinking, more children with higher academic scores answered that they are good at logical thinking. To sum up, the majority of children from the "knowing how to study" group answered so, regardless of the level of their academic scores.

When asked about persistence (being capable of making steady efforts to accomplish something), more children with higher academic scores answered that they were persistent. To sum up, the majority of children from the "knowing how to study" group answered so, regardless of the level of their academic scores.

7. Children who know how to study are trying various studying strategies

The group of "Knowing how to study" (who chose "somewhat disagree" or "strongly disagree" to the question item "I don't know how to study effectively") practiced various studying strategies than the group of "Do not know how to study" (who chose "strongly agree" or "somewhat agree"). In particular, there was a large disparity between the two groups regarding self-regulation strategy, study planning strategy, and monitoring strategy.

Figure 7: Studying strategies (linking to children's status of knowing how to study)



*The above represents the aggregated percentage of "Often do" and "Sometimes do" calculated based on the 2022 survey data.

*We divided the participant children into two groups based on their answers to the question item "I don't know how to study effectively." Namely, the group of "Do Not Know how to study" (who chose "strongly agree" or "somewhat agree") and the group of "Do Know How to Study" (who chose "somewhat disagree" or "strongly disagree").

*The above shows percentage calculated by placing equal weighting on "4th-6th graders," "7th-9th graders," and "10th-12th graders."

Children use various studying strategies daily. However, the survey results revealed that children who agreed to the question item "I don't know how to study effectively" (i.e., the group of "Do Not Know How to Study") used fewer studying strategies than the group of "Do Know How to Study."

There are significant differences between the group of "Do Know How to Study" and the group of "Do Not Know How to Study" regarding the "Self-regulation strategy" (difference: 23.7 points), "Planning strategy" (difference: 21.3 points), and "Monitoring strategy" (difference: 19.8 points). In particular, using strategies with a metacognitive approach to view oneself objectively and adjust themselves as the child learns seems to boost children's status of knowing how to study.

Other strategies associated with children's status of knowing how to study include the "Balance strategy" (keeping one's concentration while studying; difference: 17.8 points), "Comprehension-enhancement strategy" (multi-dimensional thinking; difference: 17.7

points), "Retry strategy" (reflective learning; difference: 16.9 points), and "Deeperlearning strategy" (further exploring what they learned; difference: 16.7 points).

[Summary and Discussion]

• Purpose of Analysis

In the <u>Press Release of Survey Results last year (issued on April 20, 2022)</u>, we reported that more than 50% of children answered, "I do not feel like studying," which indicates children's motivation for learning is decreasing. We also confirmed the same trend in the 2022 survey results, indicating that children are still struggling with decreasing learning motivation. Therefore, <u>to find solutions to improve children's motivation for learning, we analyzed</u> <u>survey data focusing on whether children "know how to study."</u>

• More children are facing problems in how to study

Regarding whether children know how to study, <u>the percentage of affirmative answers to</u> <u>the question item "I don't know how to study effectively" has continuously increased</u> <u>since 2019</u> (Figure 1). More precisely, the percentage of children who answered "Strongly agree" or "Somewhat agree" increased by 10.3 points over the past four years, accounting for 57.2% in 2019, 59.6% in 2020, 61.5% in 2021, and 67.5% in 2022 against the surveyed children (i.e., overall children in 4th through 12th grades). These results indicate that more children are facing problems trying to figure out how to study, showing a. particularly significant increase in elementary school children.

• Significance and effects of "knowing how to study"

Then, how are the children's status of "knowing how to study" associated with their motivation for learning? As a result of our analysis, the factor of "Knowing how to study" correlates with "motivation for learning," "study hours," and "academic achievements," respectively (Figure 2). In particular, <u>a strong correlation exists between children's status</u> <u>of knowing how to study and their motivation for learning. In addition, the correlation</u> <u>coefficient of "academic achievements" is higher than that of "motivation for learning."</u> Therefore, it can be concluded that acquiring studying strategies will improve children's motivation for learning and academic achievements. We further examined the significance of the status of knowing how to study, leveraging the advantage of our longitudinal survey that tracks the same children over time. We analyzed survey data by comparing changes in each factor between the 2021 and 2022 surveys. When looking into changes whether children knew how to study between 2021 and 2022 (by dividing the participant children into four groups based on their changes in "do know" or "do not know), we confirmed that the "Keep Knowing" group accounted for 20.6%, the "Shifting to Know" group, 12.5%, the "Shifting to Do Not Know" group, 19.5%, and the "Keep Not Knowing" group, 47.4% (Figure 3).

Next, we analyzed correlations between changes in "motivation for learning" and "academic achievements." <u>The occurrence rate of "improved learning motivation" was high among the "shifting to know" group. In contrast, the occurrence rate of "decreased learning motivation" was high among the "shifting to do not know" group, indicating in the association with each factor (Figure 4). In other words, the motivation for learning increases in children who come to know how to study. In the case of changes in "academic achievements," <u>the occurrence rate of "higher academic scores" was high among the "shifting to know" group,</u> confirming a significant difference between changes in the status of "knowing how to study" and "academic achievements" (Figure 5). Therefore, it can be concluded that knowing how to study will positively affect children's motivation for learning and academic achievements.</u>

Children's status of knowing of how to study not only improves their academic achievements but also correlates with their logical thinking and persistence (Figure 6). In sum, <u>acquiring</u> <u>studying strategies in childhood can help them develop a life-long ability to tackle</u> <u>challenging problems.</u>

• Family and school support is necessary for children to know effective studying strategies

Then, what kind of studying strategies do children use after they know how to study? Figure 7 shows that <u>children take a metacognitive approach to be conscious of their own learning</u> <u>conditions, and adjusting themselves using</u> the "Self-regulation strategy," "Planning strategy," "Monitoring strategy," and so on. In addition, strategies such as "Balance strategy" (<u>keeping one's concentration while studying</u>), "Comprehension-enhancement strategy" (multi-dimensional thinking), and "Deeper-learning strategy" <u>(further exploring what they</u> <u>learned</u>) are also <u>effective in acquiring studying techniques</u>. Therefore, families and schools should assist children in acquiring studying strategies, thereby enhancing their motivation for learning, academic achievements, and other capabilities.

Title	ISS BERD Joint Research Project "JLSCP" Japanese Longitudinal Study of Children and Parents (JLSCP) 2016-2022 (the 2nd to 8th survey) * The 2015 Survey (the first survey) is omitted because these results were not included in this analysis.				
Theme	Child Survey on Awareness and Actual Conditions of Children's Life and Learning Parent Survey on Parental Perceptions and Attitudes towards Child-rearing and Education * The survey was conducted with parents only for children in 1st through 3rd grades.				
Period	Between July and September every year				
Method	This survey used a self-recording questionnaire between 2016 and 2020, partially used an online questionnaire in 2021, and was an entirely online questionnaire in 2022.				
Samples	Children (Only par * The nu 2016 2017 2018 2019 2020 2021 2022 * The resu they we	in the 1st through 12t ents answered for chi ey are survey participa mber of parent-child s Total (4th to 12th graders) 10,928 10,133 9,493 10,131 10,519 10,522 8,682 Its of children in the 1s re not included in this a	h grades and their p ldren in the 1st thro ants for this researc samples in each sur 4th-6th graders 3,797 3,643 3,616 4,071 4,407 4,430 3,664 t through 3rd grades malysis.	oarents across Japar ough 3rd grades.) h project. The table vey year. 7th-9th graders 3,706 3,311 2,967 3,168 3,323 3,432 2,922 are omitted from the	1 below shows the 10th-12th graders 3,425 3,179 2,910 2,892 2,789 2,660 2,096 above table because
Members of Children's Life and Learning Research Project *Titles and affiliations	 Project Leaders Kaori Sato (Professor at the University of Tokyo) and Yuki Nozawa (General Manager of Benesse Educational Research & Development Institute) Project Members Hiroaki Mimizuka (Professor emeritus at Ochanomizu University, visiting professor at Aoyama Gakuin University), Kiyomi Akita (Professor at Gakushuin University, Professor emeritus at the University of Tokyo), Kayo Matsushita (Professor at Kyoto University), Hiroshi Ishida (Distinguished professor at the University of Tokyo). Sho 				

are as of April 2023.	 Fujihara (Associate professor at the University of Tokyo), Shiroh Ohno (Project associate professor at the University of Tokyo), Hiroko Osaki (project associate professor at Rikkyo University), Haruo Kimura (Principal researcher at the Benesse Educational Research & Development Institute), Runa Matsumoto (Senior researcher at the Benesse Educational Research & Development Institute), Masataka Tomonaga (Researcher at the Benesse Educational Research & Development Institute), Satoshi Okabe (Senior researcher at the Benesse Educational Research & Development Institute), Satoshi Okabe (Senior researcher at the Benesse Educational Research & Development Institute), Koji Nakajima (Senior researcher at the Benesse Educational Research & Development Institute), Aiping Liu (Senior researcher at the Benesse Educational Research & Development Institute), and Mio Watanabe (Research staff at the Benesse Educational Research & Development Institute) Research Working Group Members
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Note: All figures in percentage (%) used in this report have been calculated by rounding to one decimal place based on the calculation method for each item. Therefore, the total percentage does not always add up to 100.

[Additional Information on Survey Data]

• For more detailed data, please visit the website of the Benesse Educational Research & Development Institute. You can download "Flash Report" describing the content of this report and survey data.



For data other than stated in this report or summarized data by educational stage, please visit the link below (in Japanese):

https://berd.benesse.jp/shotouchutou/research/detail1.php?id=5855