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The use of answers-searching app and its impact on mathematics learning

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Abstract
This paper investigates the current situation of using answers-searching App by middle school students through the questionnaire method, and analyzes the four aspects of students' use time, way of use, degree of utilization and subsequent processing of the answers. The results demonstrate that the majority of the students use the answers-searching App for a relatively fleeting period of time, which is also reasonable. Based on the analysis of the above four aspects, the use of answers-searching App has promoted the improvement of students' mathematics achievements. This shows that teachers should encourage students to use the answers-searching App in the current mathematics teaching. But at the same time, students need to control their usage time and know how to use the App reasonably.

Keywords: answers-searching App; mathematics scores; mathematics learning

1. Introduction
In recent years, various types of learning Apps based on mobile Apps have emerged one after another. Among them, answers-searching Apps have been widely used in the middle school students group. Some people think that the use of this App will lead to a series of phenomena, such as weakening students' independent thinking ability, homework distortion, and weakening of classroom enthusiasm. (Yan, Z. J., 2017; Wang, S. Y., 2008) [1, 2]. At the same time, it has also been suggested that the use of answers-searching App can solve the difficulties of students' learning in a timely manner and broaden the horizons of students' knowledge. (Chen, X. Y. P., 2017; Jiang, Z. H., 2014) [3, 4]. So is the answers-searching App beneficial for students' learning? It is necessary to figure this out.

2. Review
In order to elucidate the influence of middle school students using the answers-searching App on their mathematics learning, many people have done research related to the App. For example, Liu Haiyan pointed out that using the answers-searching App is helpful for students' mathematics learning, and mentioned that most students tend to search for complicated or unique math problems(Liu, H. Y., 2018) [5]. Shen Jiaxuan analyzes the company that develops the answers-searching App and the time period of the student's use of the App, and she summarizes the characteristics and usage methods of it (Shen, J. X., 2017) [6]. Xiong Zuge and Li Yingnan investigated and counted several key factors of middle school students using answers-searching App and proposed corresponding problems and countermeasures using the App (Xiong, Z. G., 2016; Li, Y. N., 2015) [7, 8]. He Hongyan conducted a multi-dimensional investigation and analysis of the current situation in middle school students' using of the answers-search App through interviews, and made corresponding suggestions (He, Y. H., 2017; Hu, Y., 2016) [9, 10].
Reviewing these studies reveals that although many studies have pointed out that the different situations of using the answers-searching App will have different effects on mathematics learning of middle school students and propose the corresponding improvement measures. However, they only stayed on the subjective analysis based on theory. No one has used empirical research to analyze the data. For controversial answers-searching App, the corresponding empirical research is particularly convincing and research-oriented, so this paper intends to use empirical research.

3. Method
3.1 Sample
In this study, 60 middle school students from the eighth grade of a middle school were selected for the questionnaire survey, including 28 male students and 32 female students.

3.2 Data collection
On the basis of reading the reference documents, the problem that the current answers-searching App is generally concerned is extracted, and the questionnaires for these problems combined with the characteristics of middle school students' mathematics learning. The questionnaire contains 23 questions, mainly covering: basic information of students; whether the outside world supports students to use the answers-searching App; the type of answers-searching App used mainly; the way of use; the time of use; the subsequent processing of the answers; the degree of utilization eight aspects。After verification, the Cronbach coefficient of the questionnaire is 0.92, so the reliability is better. After discussions with experts, the questionnaire reached a high degree of validity. Combined with the above test results, the design of this questionnaire is reasonable.
During the investigation, the author distributed and recovered the questionnaire, and the math teacher of the investigated class supervises with the author of the article, so the results were more objective. Excluding the incomplete questionnaire, a total of 57 valid questionnaires were collected.

3.3 Data processing
The answers to the questions related to the students' use time, way of use, degree of utilization and subsequent

processing of the answers are summarized.

4. Result

4.1 Analysis of the time situation of students using the answers-searching App

According to statistics, 55.8% of students use the answers-searching App for less than 30 minutes, and only 7% of students are over 2.5 hours. Students with a duration of less than 30 minutes have the highest average score of 95.08; Students with a duration of 30 minutes to 1.5 hours have an average score of 88.09; Students with a duration of 1.5 hours to 2.5 hours have an average score of 73.20; Students who used more than 2.5 hours have the lowest average score of 69.67. In general, as the time for using the answers-searching App increases, the student's average grades show a downward trend.

4.2 Analysis of the students' use of answers-searching App

After statistics, students use the answers-searching App in a variety of ways, as shown in Table 1.

It can be seen from Table 1 that most students take the form of "think independently first → give up when the answer is not available → refer to the answer and mark the problems that is not understood". Only a few students have adopted "Think independently first →use similar problems to understand when the answer is not available →refer to the answer and do not mark the problems", "Think independently first→ give up when the answer is not available→ just look at the idea and mark the problems that searched by App ", " think independently first→ use similar problems when the answer is not available→ refer to the answer, mark the problems that searched by App ". Students who adopt the above three methods do not exceed 5%

For the way "think independently first → use similar problems when the answer is not available →refer to the answer and mark the problems that searched by App ", the average score of students taking this method is the highest. For the method "think independently first→ give up when the answer is not available→ refer to the answer, mark the problems that searched by App ". The average score of students taking this method is the lowest, 54.44.

Table 1: Statistical results of usage

Way of use	Percentage	Average Score
Direct search→ change the app when you can't search for an answer → directly copy the answer, do not mark the searched problems	9.3	62.08
Think independently first →give up when the answer not available →refer to the answer, mark the problems that searched by App.	7.0	54.44
Think independently first →use similar problems to understand when searching for no answers→ refer to the answer, do not mark the problem	4.7	72.5
Think independently first → give up when the answer not available →refer to the answer, mark the problem that is not understood	39.5	78.48
Think independently first→ give up when the answer not available→ just look at the idea and dial it, mark the problems that are not understood.	7.0	70.28
Think independently first→ change the app when you can't search for an answer →refer to the answer, mark the problems that are not understood	11.6	71.17
Think independently first→ give up when the answer not available→ refer to the answer, mark the problems that searched by App.	14.0	80.69
Think independently first→ give up when the answer not available→ just look at the idea and dial it, mark the problems that searched by App.	2.3	74.17
Think independently first→ use similar problems when the answer not available→ refer to the answer, mark the problems that searched by App	4.7	86.25

4.3 Analysis of students' utilization of answers-searching App

According to statistics, the percentage of students who have never explored other functions of the App or never answered other people's problems is as high as 69.8%. 30.2% of students occasionally explore the rest functions of the answers-searching App or answer problems from others in App. The specific situation is shown in Table 2. The table shows that students are less able to use other functions of the answers-searching App.

In addition, as can be seen from Table 2, the students who "have never explored functions and answered problems" have the highest average score of 76.15. Students who "have never explored functions and occasionally answered problems" had the lowest average score of 68.58.

Table 2: Utilization degree statistics

	Percentage	Average Score
Never explore functions and answer problems	41.9	76.15
Never explore functions, occasionally answer problems	23.3	68.58
Occasionally explore functions, never answer problems	4.7	74.58
Occasionally explore functions and answer problems	30.2	75.56

4.4 Analysis of the subsequent processing of the searched answers

According to statistics, there are multiple ways and relatively scattered forms of subsequent processing of the answers obtained through the answers-searching App. The specific conditions are shown in Table 3.

As can be seen from Table 3, the most students use the sixth method, that is, "Occasionally review related knowledge,

and occasionally question the correctness of the answer, will pay attention to the similar problems recommended by the App, only master the teacher's method when the teacher's method is different from the answer searched by App." Students in this way accounted for 16.3%. The students who take the second method are the least, that is, "the occasional review related knowledge, never question the correctness of the answer, never pay attention to the similar problems recommended by the App, and the two methods are mastered when the teacher's method is different from the answer searched by App ", which accounts for only 2.3%

As can be seen from Table 3, the fifth method is "occasionally review related knowledge, occasionally question the correctness of the answers, never pay attention to similar problems recommended by the App, and choose the best method when the teacher's method is different from the answer searched by App ", and the twelfth way is to " review related knowledge frequently, and occasionally question the correctness of the answers, and sort out similar topics, both methods are mastered when the teacher's method is different from the answer searched by App ", and the thirteenth way is to " review related knowledge frequently, question the correctness of the answers, sort out similar problems, and choose the best when the teacher's method is different from the answer searched by App ". The average scores of students who adopt the above three treatment methods are generally higher, reaching 83 points or more. The first method is "never review related knowledge, never question the correctness of the answer, and pay attention to the similar problems recommended by the App, both methods are mastered when the teacher's method is different from the answer searched by App ". The average score of students using the first method is the lowest, which is 57.77.

Table 3: Answer Processing Statistics Results

4 inspection aspects				Percentage	Average Score
Review related knowledge	**Do you question the correctness of the answer?**	**Recommended Similar problems**	**Different from the Teacher's Method**		
Never reviewed	Never question	Will pay attention	Both methods are mastered	11.6	57.77
Occasionally review	Never question	Never pay attention	Both methods are mastered	2.3	64.17
Occasionally review	Never question	Will pay attention	Choose the best method	4.7	75
Occasionally review	Occasionally question	Never pay attention	Both methods are mastered	7.0	65
Occasionally review	Occasionally question	Never pay attention	Choose the best method	7.0	84.73
Occasionally review	Occasionally question	Will pay attention	Only master the teacher ‘s method	16.3	74.41
Occasionally review	Occasionally question	Will pay attention	Both methods are mastered	4.7	85
Occasionally review	Occasionally question	Will pay attention	Choose the best method	11.6	73
Occasionally review	Occasionally question	Will pay attention	Both methods are mastered	7.0	76.39
Occasionally review	Occasionally question	Will pay attention	Choose the best method	4.7	61.67
Occasionally review	Occasionally question	Will sort out	Choose the best choice method	7.0	80.56
Regular review	Occasionally question	Will sort out	Both methods are mastered	7.0	84.44
Regular review	Often question	Will sort out	Choose the best method	9.3	83.33

5. Analysis and conclusion

From the above results, most of the students use the answers-searching App within half an hour, students' use of App's functions is also relatively simple, just to search for answers to math problems. Most students can think independently when using the app, can review the corresponding knowledge points after searching for answers, and sort out similar problems. It can be seen that most students use relatively little time for the search software, which is quite reasonable.

In addition, it can be indicated from the above table that with the increase in the time of using the answers-searching App, the average mathematics score of the students is gradually decreasing, and the difference is obvious. Students who are able to think independently before using the App will have a relatively high grade. Students who can refer the answers and review the corresponding knowledge points have higher average scores. It can be seen that the use of answers-searching App should promote mathematics achievements of students.

It is suggested that in current mathematics teaching, teachers should encourage students to use the answers-searching App. However, students should not use the App for too long. In addition, teachers need to teach students how to use the App reasonably. For example, students should think independently before using them, and then mark the search questions and review the corresponding knowledge point.

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7. References

1. Wang SY. Advantages and Disadvantages of "Network Job Help". Teaching and Management. 2008; (25):44-45.
2. Yan ZJ. Distortion and Countermeasures of Middle School Students' Extracurricular Work under the Background of Internet. Modern Primary and Secondary Education. 2017; (33):20-22.
3. Jiang ZH. You don't have to think of the "answers-searching App" as a beast. China Education News. 2014; (2).
4. Chen XYP. The Influence of Answers-searching App on Mathematics Learning of Junior Middle School Students. Basic Education Research. 2017; (15):56-58.
5. Liu HY. Research on the Influence and Enlightenment of "Answers-searching App" on Middle School Students' Learning. Liberal navigation. 2018; (8):89-90.
6. Shen JX. Applied Research on Middle School Students' Search Behavior Using Answers-searching App. Basic Education Forum. 2017; (10):4-6.

7. Xiong ZG. The Influence of Intelligent Answers-searching App on the Learning Physics of Junior Middle School Students and Countermeasures. Education and teaching forum. 2016; (46):211-212.
8. Li YN. Thoughts on the Influence of "Smart Work" Software on Primary School Teaching. Primary and Secondary School Audio-visual Education. 2015; (12):64-66.
9. He HY. Investigation and countermeasures of the current situation of middle school students using intelligent answer-searching App. E-magazine of New Education Times, 2017; (6).
10. Hu Y. Discussion on the Bad Influence of answers-searching App on Teaching and Coping Strategies. Invention and innovation education informatization. 2016; (12):43-45.