

“GoNote”: An Aided Learning Note APP

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Abstract

Nowadays, for making the teaching be livelier, most teachers join a variety of resources to aid the classroom. Thus, besides listening to lectures, students may also use photographs, audio recordings or Internet to assist themselves in their studies. However, the teaching materials come from all kinds of media, making notes, compared to the traditional classroom is more complicated. Therefore, this study designed a note-making APP, named “GoNote”, to solve this problem and to help students increase learning effectiveness.

Key words: notes, aided learning APP, learning effectiveness.

Introduction

As the development of information technology, people cannot lack the computer, communication, and consumer electronics in daily life. Students rarely carry pens and papers in class now, if they need to do a record temporarily, how should they do? Fortunately, most students have cell phones and there are many note APPs could be used. However, many functions of APPs are not complete. If you want to have enough functions, you need to download more APPs, and then, this will make note data be scattered and storage space in cell phones be insufficient. As a result, this study designed an APP, named “GoNote”, with complete functions for students. When students record things with “GoNote” APP, they do not need to download other auxiliary APPs. “GoNote” APP can let students learning more efficient and more convenient.

Literature Review

People cannot understand when they review notes because they always make notes just jot down aimlessly. When people just jot down notes, their brains are dormant and stop thinking. It makes their brain an only impression rather than a real understanding. A good note should be taken by students’ own depiction and vocabulary to explain notes [1]. Most people use the top-down approach to make notes, this way impacts notes’ horizontal expansibility [2]. If you want to make efficient notes, you have to use of the best techniques and digitization. These skills will let you reduce the time spent and forgotten [3].

According to American psychologist Joy Paul Guilford’s theory of mental structure, thinking can be divided into two kinds: “thinking of proliferation” and “thinking of convergence” [4]. The mind map uses “thinking of

proliferation” to extend radioactivity from the center to the surroundings which is combining with the images and colors of the right brain [5][6], not only can strengthen memory, thoughts and ability to adjust, but also stimulate creativity. The key of mind map is how to achieve their own goals, the use of keywords in line with their memory, and the correct link between the relevance of each other, rather than beautiful. The successful mind map, do not need to read the entire note, you can see through the mind map at a glance all the key points, the rapid implementation of its effectiveness [7] [8].

Figure 1 shows the main functions of common note-making applications and compared with the “GoNote” APP [9][10]. Attaching files on the mobile device is inconvenient and having data storage limitations. Therefore, the “GoNote” APP will provide the reference list function to avoid the above problems by marking the sources of information.

Software Functions		Evernote	Google Keep	OneNote	Trello	PasteWall	GoNote APP
PC/Mobile Device		PC/Mobile Device	PC/Mobile Device	PC/Mobile Device	PC	PC	Mobile Device
Basic	Free Layout		△ (Alignment only)	✓	✓	✓	✓
	Search	✓	✓	△ (Character only)	✓	✓	✓
	List	✓	✓	✓	✓		✓
	Reminder	✓	✓	✓	✓	✓	✓
	Handwriting	✓	✓	✓			✓
	Table	✓		✓			
Affiliated	Taxonomy	Files	Colors	Files and Colors	Files and Colors	Files and Colors	✓
	Attached File	✓			✓	✓	✓
	Reference List						✓ [≠]
	Sound Recording	Convert the Recording into the Text		Saved the Recording			© (cover the sound recording, camera, and video recording)
Advanced	Summary						✓
	Mind Map			✓			✓
	Synchronization any Electronics	✓	✓	✓	✓		
	Share	✓	✓	✓	✓	✓	
	Forum	✓	✓		✓	✓	
	Edit Immediate Together		✓	✓			
Note Method	Tree Structure of Notes	✓	✓	✓	✓		✓
	Tabular Thinking	✓		✓			✓

Fig. 1 Main functions of common note-making applications.

System Architecture and Design

Considering the trouble students may have during taking notes, we hope that the “GoNote” APP can help students review notes easier and increase learning effectiveness. Therefore, the main features of “GoNote” APP are as follows:

- (1) Through the search for the course function, students can find the related notes for the same course, to facilitate the review for the same course.
- (2) Through the search for the title or the keyword function, students can find the specified topic notes.
- (3) Through the search for the duration function, students can find the specified time duration notes to review the appropriate learning scope for an examination.
- (4) Through the sorting function by the number of times read, students can understand the studying status of each note in the same course. The more times a note read is, the better the students’ reviewing state is. Students can also view the study status of all notes in each course by the reading status chart. The more reading times taken are, the darker the color is. From the status chart, students can directly click the lighter color notes for review. When the color of the whole chart is the same, it represents all notes in a course are read the same number of times.
- (5) Through the sorting function by the importance level, Students can understand what notes they need to focus on particularly.
- (6) Through the sound recording and video recording functions, Students can record the instant voice or video contents of class, for reviewing at any time after class.
- (7) Through the camera function, while it will be too late to type or write the contents on the class, students can take photos.
- (8) Through the to-do list function, students can extend the work of a note to a list of tasks. Moreover, by checking the status of completion of each to-do list, students can manage the detailed work.
- (9) Through the reminder function, students can set the test time or homework dateline to remind students to accomplish important things as scheduled.
- (10) Through the summary function, students can write down the learning experience for each note, or summarize them to the mind map.
- (11) Through the reference list function, students can keep references and handout source for each note.

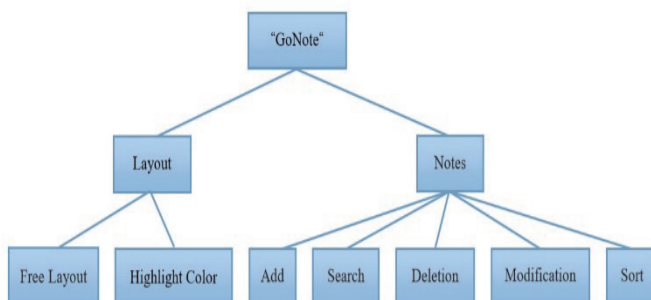


Fig. 2 Architecture of “GoNote” APP.

Thus, the designed “GoNote” APP mainly consists of two parts, the Layout and the Notes, as shown in Fig. 2. The Layout module includes free layout and highlight color settings. The highlight color is set for different importance level of each note. There are three different levels means (1) the most important thing, requiring prompt handling or completion, (2) to be completed within a limited time, and (3) something that has already been done. The details of the Notes module are as follows:

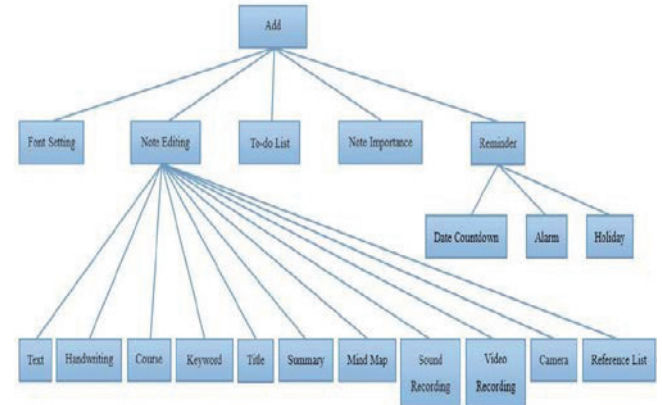


Fig. 3 Functions of Add notes.

- **Add notes:** As shown Fig. 3, students can add new contents to the note. The contents of a note includes the course name, keyword, title, summary, mind map, sound recording, video recording, camera, and reference list. The system will automatically add the time and the number of viewed while that note is created. The students can set the font, edit the content and make a to-do list for this note, and put down important events. Besides, students can remind themselves with date countdown, alarm, and holiday.
- **Deletion notes:** Students can choose a note or a course (including all notes in a course) to delete. The system will move them to the trash bin first. If students confirm to permanently delete them, they can select “Permanent Deletion” from the trash bin, and then, the course or note will be completely deleted.
- **Modification notes:** The system allows students to modify all the contents of the note.

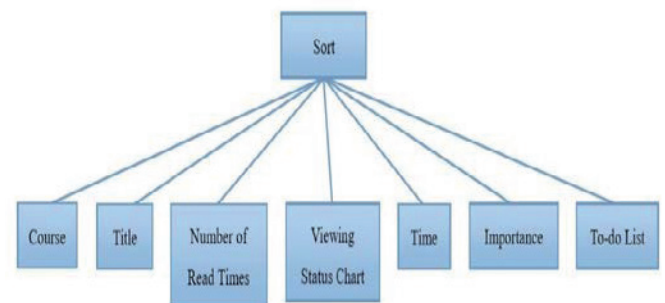


Fig. 4 Functions of Sort.

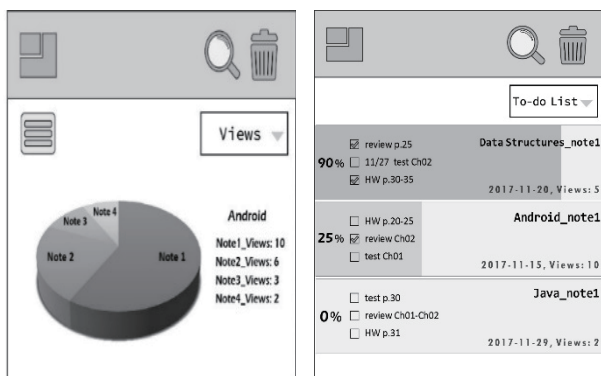


Fig. 5 Chart of viewing status. Fig. 6 Sorting of the to-do list.

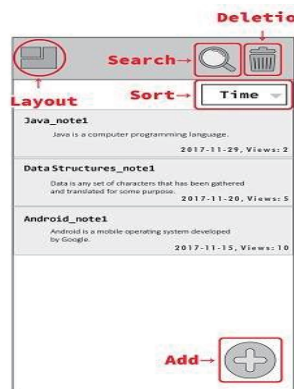


Fig. 9 Notes.



Fig. 10 Sort.

System Implementation

- **Search notes:** Students can search any note by the course name, keyword, title, time, or the importance level to quickly locate the notes they want.
- **Sort notes:** Students can choose their needs to be sorted, such as course, title, the number of viewings, time, importance level, or to-do list and so on (shown in Fig. 4).
 - When sorted by course name, the more important courses will be ranked on top.
 - When sorted by the title, the title with the least Chinese strokes will stay on top.
 - The more times a note is studied, the better a student's reviewing condition will be.
 - Through the chart of viewing status in a course, students can see how well each note is studied. As shown in Fig. 5, the darker the color is, the more frequent the viewings are. So students can click on the lighter-colored notes to review them. When the whole chart is of the same color, it represents the same number of viewings of all the notes as well as the same reviewing condition.
 - The newest notes you edited will stay on top.
 - Notes with more important will also be listed above.
 - Students can examine the extended list from each note. As shown in Fig. 6, they can see the unfinished list and the completion status of the to-do list (shown in percentage), so that detailed work management can be carried out.

"GoNote" APP was implemented by APP Inventor. APP Inventor is a web APP development environment by Google. Students can easily drag and drop the object to make the APP, can understand the logic and structure of the program language at the same time.

The important interface of "GoNote" APP are introduced in the followings.

● Home

When students open the "GoNote" APP, there is a basically introduction screen and then the APP fades into the Home screen. It consists of the Layout and Notes buttons. Student can choose what they want to enter and edits (see Fig. 7).

● Layout

In the interface of layout, students can drag and drop notes, change the size and the color, and create the dedicated "post it wall". Students can click the "paper" icon that is on the top left corner to begin the notes module for editing (see Fig. 8).

● Notes

Students can see notes which are already founded. There are add, deletion, modification, search, and sort icons in Fig. 9. All notes are presented by the time, so the newest note is at the top of the page. Students can change the sort way or link to another page. Students also can click the icon that is on the top left corner to back to the layout interface.

● Sort

The sort function is displayed in the spinner. It includes the course, title, number of read times, time, importance level, and

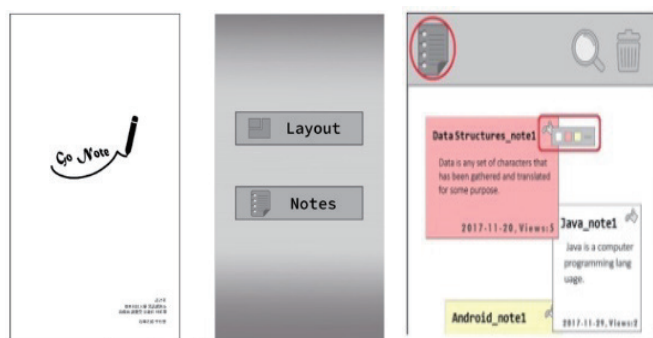


Fig. 7 Home screen of "GoNote" APP.

Fig. 8 Layout.

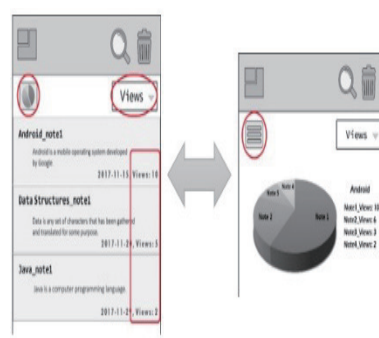


Fig. 11 Sorted by number of read times.



Fig. 12 Search.

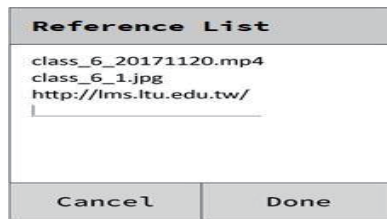


Fig. 13 Reference List.

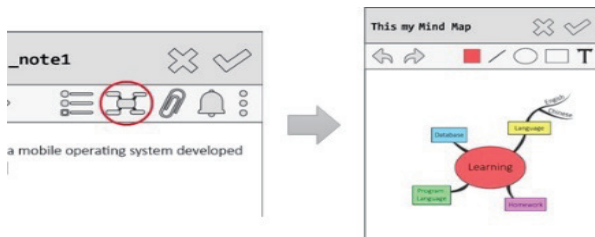


Fig. 14 Mind Map.

to-do list (see Fig. 10). Figure 11 reveals the sorted notes by number of read times. Clicking the icon in the top left corner, students can find the viewing status chart. Students can understand their reviewing status clearly and achieve the most effective learning. Students also can see each to-do list's percentage of completion and know the status of completion of the to-do list (see Fig. 6).

● Search

Clicking the “magnifying glass” icon, the APP will enter into the search interface. Students can type what they want to find on the Textbox (see Fig. 12). Student also can use the filter to choose the course, title, time, importance, or keyword. It can reduce the search range and let students find the note fast.

● Add

Students can set basic attributes and functions. Students can decide whether to create a to-do list for a note. Students also can use the slider to delimit the important level. In the slider, from left to right means from low to high. When setting completed, students can choose the way to make a note, it consists of the text, handwriting, sound recording, video recording, and camera. Student can also set up the reference list (see Fig. 13), mind map (see Fig. 14), reminder, and summary, these functions can make a note more complete as a whole.

Conclusions

“GoNote” APP is designed to make taking notes in class much easier for students. With “GoNote” APP, the following studying routines can be greatly improved:

- (1) In terms of the course: Students can edit the course name and find the notes related to the same course.
- (2) Search: Students can use the title or keywords to find the notes they need. Chronological search also allows students to review when the exam is on the corner.
- (3) Order by the number of views: Through sorting, students can understand the studying status of each note. The more times a note is studied, the better student's reviewing

condition is. Students can connect to the pie chart of reading status, so that they can know the reviewing condition and focus on the notes with fewer reads. Besides, when sorted by importance, students can understand which notes they need to particularly focus on.

- (4) Sound and video Recording: The contents of the class can be recorded in real time, so it will be easier for students to review any time after class.
- (5) Camera: Students can always take pictures of the lesson's main points in class.
- (6) Set up a to-do List: Students can create a to-do list of the extra work from a former note, and with the percentage of completion status of each list, they can understand the current working conditions and help students to carry out detailed work management.
- (7) Summary: Students can write down opinions or highlights on the notes.
- (8) Mind map: Students use simple and easy-to-understand mind maps to connect key points in a note, which will help students learn and review later.
- (9) Reminder: Students can set the time of a test or an assignment submitted. With the date approaching, the alarm will go on to remind students to complete the important things as scheduled.
- (10) Reference list: Students can add a list of a note for those resources from other media to make the notes more complete.

In summary, through these main features, “GoNote” APP can help students review the note easier and learn better in a convenient way. It will improve the learning effectiveness and enhance students' learning interests.

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