Developing Strategies for the Effective Creation and Sharing of Notes

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Making notes is a common activity for students to engage in, yet research shows that instruction on making efficient notes is not widely taught. This paper will discuss various concepts and suggest some simple activities that teachers can use in order to facilitate more effective note-taking amongst their students, which may potentially lead to more robust learning. This includes activities on organizing hand-written notes. Also, strategies that encourage the personalization of, as well as active engagement with notes will be covered. Finally, the paper introduces an individual learning log, which has benefits both in online, and in face-to-face classes. Using the log, students are able to actively engage with their notes through writing activities, as well as build their knowledge collaboratively through pair and small group discussions, centered around their notes.

一般に学生は授業でノートを取るが、効率的なノートの取り方に関してはあまり指導されていないという調査結果がある。本論文では、学生がより効果的にノートを取れるようになり、さらに学習意欲の向上にもつながる簡単なアクティビティを提案する。具体的には、手書きノートの整理、ノートのカスタマイズの仕方、ノートの活用方法等である。最後に、オンラインでも対面授業でも役に立つ個人の学習ログを紹介する。このログを利用することで、学生はより積極的にライティング・アクティビティに参加することができ、またノートを共有しながらのペアおよび小グループでのディスカッションを通して、共同でそれぞれの知識を構築することが可能になる。

Whether students are making notes for the purpose of remembering a lecture, preparing for a presentation or an essay, or simply developing their own personal understanding of the material they are coving in their courses, there are many useful ways that teachers can provide instruction regarding note-taking. As Kobayashi (2005) stated, "Positive interventions include pre-training of note-taking skills or techniques, … and giving verbal instructions to employ an effective note-taking procedure" (p. 245). Yet, instruction in making notes does not seem to be widespread, as Boch and Piolat (2005) pointed out, "[e]ven though techniques for understanding and writing texts are widely taught and practiced throughout a student's school and university career, very few students are taught even basic 'note-taking' skills" (p. 101). Such instruction may help students to become more cognizant of their own note-taking strategies, teach them how to develop methods for taking notes in a more personalized way, as well as possibly increasing their awareness of the benefits of effective note-taking.

This paper begins by presenting some background information on note-taking from the literature, and moves on to discuss various classroom activities that have been introduced in the author's own classes in order to encourage students to produce more meaningful, robust notes. Finally, the paper introduces a learning log, with which students can actively work together with classmates to share their notes and learn from each other. The learning log will also be discussed as a way in which students can meaningfully engage with the material they are studying through activities such as summarizing and critically thinking about the information in their notes. While the main purpose of this paper is to share ideas on note-taking, the conclusion will include some suggestions for future research regarding the content discussed.

Literature Review

Considerations for Note-taking Instruction

It is well understood that note-taking is an essential activity for university students, and it is thus logical for teachers to provide some kind of instruction and feedback in order to help guide students' development of this skill. However, Siegal (2018) pointed out that while teachers feel that they may be teaching note-taking, they are in fact only providing practice for students. He highlighted that instructors must "be aware of the tenuous assumption that learners 'already know how to take notes' or that 'they must have learned it before'" (p. 1).

Another difficulty facing teachers is what kind of note-taking instruction to provide, a certain method of note-taking, or scaffolding that provides room for students' individual differences? In a study conducted with Taiwanese students in an English as a foreign language (EFL) environment, Tsai and Wu (2010), provided instruction using the Cornell note-taking method over the course of 14 weeks, in order for learners to improve their skills in English language listening activities. The researchers pointed out that the Cornell note system did not replace existing note-taking strategies that the students had, but definitely gave learners an edge over the control group. Two salient points highlighted by Tsai and Wu in this study were that students had "more capability of storing the message externally with a better recall"; and that, "[b]y taking notes in English, students had a better opportunity to make connections, organize their thoughts, and develop ideas" (p. 127). This seems to indicate that specific instruction, promoting a particular method of note-taking, such as Cornell noted, is the desired course of action in note-taking instruction. However, as Siegal (2018) pointed out, other studies have looked towards ways of considering student preferences and individual differences when it comes to note-taking instruction. To reinforce this point, Siegal highlighted the Badger, White, Sutherland, and Haggis (2001) qualitative study, which explored how students conceptualize their note-taking; specifically, their purposes and techniques for taking notes, and how the participants use their notes after a lecture.

The Value of Student Engagement with Notes

To improve learning and recall, a central goal of note-taking is to enhance generative processing; to give learners a chance to engage with their notes in various ways (Kobayashi, 2005). A way to promote engagement is for students to avoid copying information verbatim. As stated by McPherson (2018), notes are only "effective to the extent that you paraphrase, organize, and make sense of the information", and that "verbatim notes… are of minimal value" (p. 6).

One approach to encourage originality in note-taking is to have students take notes by hand. A problem with typed notes, as indicated by Brown (1988, cited in Mueller & Oppenheimer, 2014), is that students are generally able to type faster than they can write by hand, which can lead to producing more verbatim notes. This is less than desirable as it results in less engagement and does not lead to generative note making.

It should also be mentioned that simply asking students not to take verbatim notes with their laptops was shown not to stop them from engaging in this practice (Mueller & Oppenheimer, 2014). The researchers also found that students who made hand-written notes did better on tests than students who made notes on their laptops, even with questions that involved recalling specific facts. Although it would seem to make sense that the verbatim notes would aid in this task, the researchers speculated that the students who took the hand-written notes may have engaged "in more processing than laptop note takers, thus selecting more important information to include in their notes, which enables them to study this content more efficiently" (Mueller & Oppenheimer, 2014, p. 8). While the points described above relate to taking notes based on a lecture, it is logical that the same principles would apply to copying and pasting verbatim items of information from various text sources, such as web pages. As many research projects are done online these days, it can be advantageous to make students aware of this kind of information.

Activities for Organizing Notes and Promoting Engagement

In this section, several activities will be discussed that teachers can introduce to help students engage more meaningfully with their notes. These activities also provide students with ideas for better organizing notes. The methods discussed do not look specifically at any one particular template for note-taking, such as Cornell notes, but can be adapted to a variety of note-taking styles based on the needs of the students.

The context in which I used these activities, or showed models of various note-taking methods, was in several first-year university classes in which students worked on research projects over the course of several weeks. The activities described were done both in face-to-face classes, and in online classes after the Covid-19 pandemic started. The level of the learners was pre-intermediate to intermediate. Each week the students were required to share the information they had researched and made notes on, with

other classmates in pairs or in small groups. It was thus important that their notes were both clear and informative, not only for themselves, but also for other students. Although notes can be made for strictly personal use, in which case the clarity of the notes to others becomes less important, having students share their notes with their peers gives them a chance to both explain the content in English, and consider various ways of organizing their notes.

Once students are made aware of the importance of creating their own, original notes, there are several easy strategies that may be introduced to help them accomplish the task of organizing their notes. The use of color for example is one such strategy that students can easily incorporate into their notes. In my classes I recommended to students that color could be used to indicate references, groups of related information, or be used to highlight key points. I also felt it useful to mention to students that it is possible that they may recall different color patterns easily, thus aiding the memory process (Cottrell, 2019). In class, I used black and white and color versions of notes as a way of demonstrating to the students how much more easily information can be found on a page of notes that incorporated some kind of color system.

Another strategy I had my students try was to visually arrange their notes using various organizational patterns. For example, students may organize information by a hierarchical structure such as a tree-like network, where information branches out from a central point, or perhaps by using proximity grouping, where related items are written down closer together, and more unrelated topics are written slightly apart (McPherson, 2018). An important point here is that presenting various options to students allowed them to both personalize their notes and experiment with various strategies for creating more effective notes.

After showing example notes, I did an activity to get students to try these organizational concepts. The students were given two lists of words, one of which was random, and one which had been organized by category. Students could then compare which list was easier for them to recall (Cottrell, 2019). An extension that teachers could also try is to give students items of information directly related to the subject they are studying, and then ask them to organize it in a way they feel is logical, based on the suggestions above. In comparing their results with other students, they can become more aware of various possibilities for organizing notes, providing them with a robust set of strategies from which to further develop their own skills.

A further means of promoting student engagement with the material in their notes is through the use of simple illustrations. As pointed out by McPherson (2018), some people may feel apprehensive about the act of creating illustrations; however, the act

of doing this usually results in people "spending much more time with the material to be learned, which in itself is going to improve recall" (pp. 121-122). To introduce the activity, I showed example notes with and without visual elements, and asked the students to discuss which set of notes was more memorable. I also tried to make sure that any visual elements were kept simple enough, in order to reinforce that it is the engagement produced by introducing the visual element, not its artistic merit, which is the key factor. This seemed to work well, and along with an improvement in the students' notes in the class, I heard students comment that they found other students' notes interesting and that they helped them to become more interested in the topic being discussed.

In my classes I regularly checked the students' notes, and the notes were included for evaluation at the end of a multiple-week research cycle. Evaluation was based on the level of detail, and the organization, that they put into their notes. In the majority of cases I was very pleased with the development I saw regarding the variety of note-taking methods used in these student research notes.

The Individual Learning Log

In the previous section, several strategies were discussed that can be used to help students engage more fully with the material they are learning through effective note-taking. In this final part of the paper, a digital, individual learning log will be introduced. I have found this log useful in several ways in the classes I teach. It can be a place for students to store their handwritten notes digitally in an organized fashion, and it allows students to engage with the material in their notes easily through summary writing, critical writing, and goal setting. The log also provides the means for students to share their notes collaboratively in online discussions, at times when traditional notebooks would simply be too awkward to use.

The Learning Log and Class Context

When the COVID-19 pandemic started in the spring of 2020, many institutions adopted a system of emergency online teaching. For some classes, this presented a pedagogical puzzle of how students might share their notes online in a way that mimics the sharing of notebooks. As a solution to this puzzle the idea of the individual learning log (see Appendix) was developed. The original idea came from discussions held by faculty members of the Chuo University Faculty of Law, and they created a simple template that could be easily adapted to a variety of classroom situations. Permission

was given to adapt and use this learning log freely. For the purposes of this paper, my observations of students using their learning logs come from a first-year university, global issues content-based class. The class size was approximately 30 students, and the level of the students was upper intermediate. No student-produced notes were collected for inclusion in this paper. I consulted with my immediate colleagues in the faculty and obtained departmental approval to discuss my classroom practices in this project.

In these global issue classes, students did research over the course of several weeks, discussing their issues week by week with partners or in small discussion groups. Roughly 15-20 minutes of class time, after the discussion periods, was dedicated as writing time, so that students could work on summaries and other tasks in their learning logs. In the past, these kinds of activities were done using traditional notebooks, but I have found that the digital learning logs have additional benefits that notebooks do not offer.

The individual learning log is a digital file, which can be divided into as many sections as needed, into which students can insert digital photographs of their hand-written notes, each of these sections could represent a time period of note making, or a theme connected to the particular notes to be shared; for example, a one-week interval of research and note-taking on a global issues-based topic. As information gets added to the file, it shows the progression that students have made in their note-taking. This can also give the students a starting point from which to tell their research story through their discussions or writing activities, or share other information using their notes, such as new vocabulary.

In several ways the individual learning log is like a traditional notebook, but in a format that can be shared on screen in an online conferencing application such as Zoom. It also has the added benefit of being flexible in providing logically placed writing spaces adjacent to the relevant notes, avoiding the potential problem in traditional notebooks of where to place summaries and other writing tasks. Finally, the log can be handed in through an online classroom management system, or other online storage system such as Google Drive, which makes the sharing, collecting, and evaluation of the notes very manageable.

Using the Individual Learning Log

When I first distributed the learning log to students, I attached model notes on the log as examples, which they could then replace with their own. Also, I provided simple prompts for summary writing, reflective writing, and goal setting, in addition to minimum word counts, to help the students get started on the reflective writing they

did weekly, based on their research. I have found that such writing can also provide the teacher with excellent insights into the level of understanding that students have regarding the material they are researching. In this way, I have found the individual learning log to be a very flexible tool.

Generative activities such as summary writing, paraphrasing, or making comments about the material being learned, can enhance the student processing of the material and create meaningful connections. In addition to this, in my classes, students created personal goals for their research each week on their learning log, an activity that Dam (2018) said can help facilitate learner autonomy. In my classes, goals were basically centered around their research projects and what the students would explore next, but ways of improving notes and/or improving English could easily be incorporated into the students' goals as well.

Along with exploring the content of their notes in writing activities, I have had students share information using their individual log, in pairs or in small groups, which was also a way of creating meaningful engagement. In presenting material orally to a partner, students needed to paraphrase and organize information into an understandable narrative. They may also have needed to simplify difficult concepts in order for their partner to understand their ideas. This kind of sharing of research with other students can lead to a transformative learning experience through the process of forming new opinions about the information being discussed with respect to its relationship to both the individual note-taker's previous knowledge, as well as through the discussing of the material with a classmate (Marin & Sturm, 2020; Castelló & Monereo, 2005).

One note-taking activity I tried in my classes as part of their sharing activities was to have students listen to partners, and simultaneously make notes based on what their partners said. I did not ask students to add these to their learning log as they were not directly related to their own research, but these notes could be easily added to the learning log as a record of their class activities. These listening and note-taking sessions could also provide opportunities for teachers to introduce new strategies for making notes, which students could try immediately, depending on the needs of the class.

Finally, I have used the sharing of learning logs between students as peer-review sessions allowing them to learn from assessing each other's notes. It just took a few moments for students to look at each other's notes and as part of the session, they either provided positive comments on what was working well for them in their partner's notes, or made suggestions to their partner for improving. I feel that this gave the students a further opportunity to work collaboratively and raise their knowledge of various note-taking strategies.

Conclusion

In order to facilitate effective note-taking skills, it is important for students to understand why creating well-organized, hand-written notes can be of benefit to them. This involves taking some time to teach students multiple note-taking methods, so that students develop a varied pool of strategies from which they can create more effective and more personalized notes.

In my classes, I have observed students' progress in developing their notes, and I believe that promoting generative learning through activities such as paraphrasing, summarizing, and critically writing about information in notes, organized into a learning log, could assist in constructing new ideas and higher levels of understanding about what they are studying. Finally, I feel that in actively using the notes they made, for example in the pair and group discussions, students were able to participate collaboratively in their learning, by sharing information, and by sharing note-taking ideas with each other.

This paper introduced a number of strategies for instructing students on making and using notes effectively and provided some anecdotal observations of students' progress. However, no formal research study was conducted regarding this material. As note-taking is an integral part of higher education it would be a useful next step to build on the ideas discussed in this paper in research projects in order to gather data from the students regarding their attitudes and progress with regards to note-taking. Of particular interest could be various ways that the individual learning log could be used as a tool to scaffold note-taking instruction by assigning students more specific tasks through it, and recording the outcomes of these interventions. In combination with this, it could be interesting to survey the students regarding their personal development of note-taking strategies, and their views on any connection between their learning and the notes that they have produced. Finally, researching the role that the individual learning log could play as a collaborative learning tool through which students share the information they have learned would be of value.

Bio Data

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Appendix

Following is a simple template for the Individual Learning Log labeled for first-year students taking notes as part of a multiple-week research project in a global issues class. The students begin by brainstorming ideas and making a kind of mind-map about what they know. Using this they can create research questions and begin researching their topic. Also included are examples of note-taking tip sheets that teachers could add directly to the learning logs in order to assist the students as they get started.

Name of Course (Spring 2022)

Individual Learning Log for Research

Teacher: Teacher's email: ___   Day and time

Student's Name: Student No:

Month Day, Year (Starting the research project)

Your issue for Research Cycle 1:

Research Journal Writing 1 (Starting points: 100-200 words)

1) Write about your interests in this topic
   What is some information that you know now?
   How did you become interested in this topic?

2) What are your first research goals and questions?

I would like to know more about…
Question words to help you: who / what / where / when / why / how

Write below:

Research Notes 1 (Starting Points MIND-MAP)

Add a photo of your starting points mind map (what do you know about the issue now?)

Next class you will discuss the mind map with a partner and continue adding to your notes

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Week-2: Month Day, Year (Finding background information)

Research Journal Writing 2 (100-200 words)

1) Write a brief summary of your findings

2) What are your thoughts and opinions about your findings?
   Did you find anything surprising or interesting in your research?

3) What are your new research goals and questions?

Start writing here:

Research Notes 2 (Homework Assignment 2)

Add a photo of **page 1 of your research notes**:

Add a photo of **page 2 your research notes**:

Include your sources for this research:
Article Name (date)
URL:

Week-3: Month Day, Year (Finding a case study)

Research Journal Writing 3 (150-250 words)

1) Write a brief summary of your findings

2) What are your thoughts and opinions about your findings?
   Did you find anything surprising or interesting in your research?

3) What are your new research goals and questions?

Start writing here:

Moreau: *Developing Strategies for the Effective Creation and Sharing of Notes*

Page 1 — Research Notes

Note-taking tips

- Have a good clear title

Page 1 — 24/11/2021 — Include date and page number

Being organized can really help, especially if you will notes later

Write what you need
- avoid writing too much
- avoid full sentences
- explaining + writing from key point notes → INCREASES ENGAGEMENT! + paraphrasing in English

Take time with your notes
- Visit the material
- Several times
- in different ways

Makes Information memorable!

Stay brief
- Phrases not sentences
- Sections for — New vocabulary / references
- Use clear headings
- leave spaces — can make comments or can ask questions later

Comments + questions — sounds like a good idea!

NOTICE
The use of color, arrows and **visuals** such as all help to keep the notes easy to follow, and the key points easy to find

- USE YOUR OWN WORDS!
  - Avoid plagiarism
  - More engagement with material

Divide your page
- boxes, lines etc. → organize information
- arrow, color, etc → to make connections

References:
Cottrell, S. (2019). The study skills handbook. Red Globe Press

Page 2 — Note-taking tips II

Page 2 — 24/11/2021

When? How? Why? — Ask questions. Who? What? Where?

Personalize your notes — Visuals

MIND MAP
- explore different ideas — stimulate your thinking
- brainstorm — NO WRONG IDEAS! can sort them later
- Visualize your ideas — make connections through color
- use in lectures to write ideas quickly
- Can use as a first step → organize ideas later
- can write what you know about a topic to get started

References:
Mind Map comes from: Buzan, T. (1993) The mind map book. London: BBC

Visual can help you make associations + link ideas to your memory

Organization
Connected information into logical groups

Peru Ecuador USA Benin Canada Chad Italy Japan India China Mexico Belgium Germany Brazil Kenya

COUNTRIES BY CONTINENT

Africa	Asia	Europe	N. America	S. America
Benin	Japan	Germany	USA	Ecuador
Chad	India	Italy	Canada	Brazil
Kenya	China	Belgium	Mexico	Peru

You may want to re-organize information into logical patterns to engage more fully with the information and make your notes easier to understand later

Other tips
- Write questions
- Write summaries
- Use notes to give verbal summaries
- Identify difficult vocabulary
- Make a separate section for vocabulary
- Trade ideas with a partner
- make notes from written and visual, or aural sources
- Find information from multiple sources → get different points of view
- Try different styles of note taking
- Try to have fun, find your interest in the material

References:
Cottrell, S. (2019) The study skills handbook. Red Globe Press