

## REVISING THE USED OF GUIDED NOTE TAKING IN MATHEMATICS CLASSES

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### ABSTRACT

*Learning mathematics in the lecture room is a process that is influenced by the role of teachers and students as individuals who are directly involved in this learning process. As an intermediary, the teacher must know where the source of information for certain knowledge is and control the mechanism to get it if students need it at any time. The students must take notes. However, there are serious problems concerning students' notetaking in traditional mathematics lectures. Making sense of the content later is also difficult because many students do not include the lecturer's oral explanations in their notes. One approach to addressing these problems can be the use of guided notes: a modified version of the instructor's notes with certain blanks the students must fill in during the lecture. The purpose of this exploratory study was to understand the potential usefulness of guided notes in mathematics courses. With guided notes, the instructor provides some type of outline of the material to be covered, but with space left for students to complete key information. The notes combine typed information, handwritten content, and graphics, but still leave room for student notes and working out example problems. Diagrams are pre-drawn, but some key numbers are left out for students to fill in during the lecture. These notes consolidate all the technical material for a lecture into a single document, and the information is organized to align with the lecture. In this study, the usefulness of this method been reviewed and how well they balance the efficiency offered with the need for students to actively participate in the encoding process.*

**Keynote: Guided notes, mathematic, notetaking, information, technical**

### Introduction

Every day, students take notes in classes all throughout the world. When we think about notetaking, it's natural to assume a context of lecture-based lessons. And, surely, that is a common scenario in which a student will take notes. But other learning experiences also lend themselves to note-taking: Watching videos in a flipped or blended environment, reading assigned textbook chapters or handouts, doing research for a project, and going on field trips can all be opportunities for taking notes. However, the literature suggests that in mathematics lectures students' notetaking is often limited to writing down the definitions, theorems, and proofs the instructor has written on the board (Weber, 2004). Students are often just busy copying everything correctly instead of paying attention to the lecturer's explanations (Freitag, 2020). The teacher, as an intermediary, must know where the sources of information for specific knowledge are and regulate the acquisition mechanism if students require it at any moment (Saud & Suherman, 2006). Teachers assist students in developing their abilities to respond to their circumstances through the acquisition of information and knowledge.

Providing students with parts of the lecturer’s notes as a compromise between requiring them to take their own notes and providing them with the lecturer’s full notes has been suggested in the literature since the 70’s (Collingwood & Hughes, 1978). Collingwood and Hughes (1978) used the term partial notes, a phrase that still appears in more recent studies (Cardetti et al., 2010; Cornelius & Owen Deschryver, 2008). The term guided notes were first defined by Heward (1994) as “teacher prepared handouts that guide a student through a lecture with standard cues and specific spaces in which to write key facts, concepts, and relationships” (p. 304).

These are reprinted lecture notes with blanks at certain places that the students are required to fill in as the lecture progresses (Austin et al., 2004). Guided notes can offer a way to involve the identified learner, help them focus on what is important, remove negative stigma for accommodations, and the identified learners to practice their note-taking skills. Guided notes are handouts created by the lecturer that include previous knowledge, normative signals, and designated spots for students to record important material during lectures. Guided notes require students to actively reply during the lecture, improve students' notetaking accuracy and efficiency, and promote students' memory of course content. It can help organize and enhance lecture content in any discipline or subject area. Instructors can develop guided notes for a single lecture, for one or more units within a course, or for an entire semester-long course. Under the linear style, guided notes are a subcategory of the outline approach. They are basically a pre-planned organiser that allows students to follow the flow of a lecture and fill in the blanks by hand. Students follow along with the lecture and fill in the missing information. These notes are already organized in a structure that indicates importance thus relieving the student of precious working memory space. Figure 1 below demonstrates the use of guided notes in a special education math class.

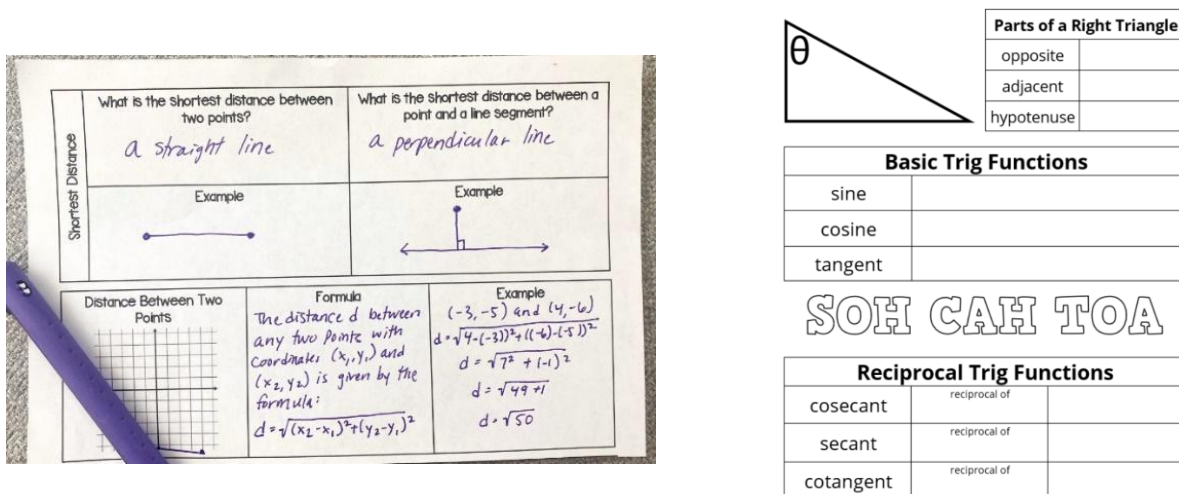


Figure 1: Sample of Guided Notes

### **Why should use guided notes in mathematics**

- 1) Many students were not taught how to take accurate notes in elementary and middle school. Unfortunately, there is so much knowledge to teach in all subject areas that teaching notetaking, particularly in mathematics, falls by the wayside. Here's where guided notes come in handy.
- 2) Most student mathematics notes are disorganised. When students need to utilise them as a reference tool, they can be difficult to understand. When students are given a guided notes package for each unit of study, it is simple to keep them organised.
- 3) Guided notes make it simple for the teacher to determine if students are staying on track. They also make it clear when and if a student has tuned out the debate.
- 4) If a student is absent or misses a mathematics class, they may simply see what they missed and obtain the missing notes from the teacher or another student for future reference. They can make a note of what doesn't make sense to them and seek assistance in those areas.
- 5) Guided notes are an excellent resource for independent practise and study. They are also an excellent resource to bring to tutoring to help the tutor understand where the student is suffering.

### **The Advantages of using Guided Notes**

- Students who take detailed notes and study them later routinely beat students who merely listen to the lecture and read the text (Baker & Lombardi, 1985; Carrier, 1983; Kierwa, 1987; Norton & Hartley, 1986). Inaccurate and incomplete lecture notes are of limited value for subsequent study. Guided notes can help level the playing field between students with and without good notetaking skills.
- Students' full engagement in course content evolves. Students must actively respond to the lecture's content by listening, seeing, thinking, and writing to finish their guided notes.
- Students are better able to determine the most important facts. Students can better assess if they are absorbing the most important knowledge since guided notes trigger the location and number of significant concepts, facts, and/or relationships.

- Students achieve higher quiz and test results. Experiment after experiment has repeatedly proven that students of all abilities and ages/grade levels receive higher test scores while using guided notes than when taking their own notes (Austin et al., in press; Heward, 1994)
- Students can use guided notes as an advanced organiser. Some students have stated that reading the lecture topics prior to attending class is beneficial.
- Guided notes inform students about what is expected to happen next, teachers are less likely to stray from the planned content. When a teacher does wander, both the teacher and the students understand that the knowledge is at best supporting context or enrichment, rather than important course content for which the students will be held accountable.
- Help instructors prioritize and limit lecture content. Many instructors try to pack their lectures with too much information. Constructing guided notes requires decisions about what is important, what the key concepts are that the instructors want their students to learn.

## **Conclusion**

The guide note taking method is a method used in the learning process by which the teacher provides a prepared form or sheet, this sheet instructs students to take notes while the teacher teaches (Silbermant, 2009). From these definitions, it can be concluded that guide notes taking learning is learning that uses guided charts or notes that require students to be able to understand problems and solve problems, students are expected to be able to conclude, define, formulate, and think in general. Cardetti, Kamsemanan & Orgnero (2010) suggest that providing students in mathematics classes with guided notes is beneficial to their learning. The students' voluntary comments about guided notes showed their appreciation for the method. Students emphasised the importance of guided notes in keeping them engaged with the lecture, providing opportunity to participate actively in class, and effectively reviewing for exams. In addition, the comparison of the examination scores suggests that guided notes might have been a factor contributing to the improved student performance.

When faced with the direct delivery of mathematics teachings, the condition of students will become something abstract when accepted by students, resulting in many students whose scores do not meet the aim. There must be a suitable remedy for this situation to not be continued. The teacher's responsibility as a motivator is to find new ways to improve pupils' learning motivation. The guide note taking learning approach is one strategy that can be applied.

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