What You Need to Know:

Comprehension

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What Is Comprehension Instruction

Comprehension is the goal of reading programs, but it is much more than being able to recall information in a text. In fact, on the scale of comprehension, knowledge of the content is right at the bottom. When we discuss comprehension, here is what we mean.

Definition

Ability to develop a justifiable, personal interpretation of a text.

Have you ever had this experience? You and a friend read the same news article about a new law that the government is trying to pass. You think the law is a terrible idea and that it shows how out of touch the government is. Your friend thinks the law would be a pretty good idea and that it shows the government understands how "common people" feel. You read the same article, but you have different reactions.

Perhaps you and a friend are reading the same book. The main character is going through a difficult time. You are bored by the book and think the main character is unrealistic. You think the story is predictable. Your friend is enthralled by the book and thinks the main character accurately represents what people actually experience during hardship. Your friend cannot wait to find out how the story ends. Again, you read the same text, but you have different reactions.

These are two very simplified examples, but there is a reason two people can read the same thing and have different impressions. When you read a book, article, advertisement, manual, etc., you interpret the text based on your existing knowledge, your experiences, your perspectives and philosophical outlook, and your general mental alertness and emotional state. When you are reading, you bring your whole self to the process.

Whether you are reading fiction or non-fiction, you will interpret the text. You will respond to the ideas and content, you will form an impression of the author, you will compare it to what you already know, and you will judge the value of the text as a whole. Your interpretation, your impression, of the text will, ultimately, be a combination of the words you read and your schema.

The concept of schema is critical to comprehension. In psychology, a schema is the way you perceive the world. Your schema is a merger of your perspectives, beliefs, experiences, and knowledge. It is the way you see the world and respond to new information and experiences. When you read something, you filter it through your schema to arrive at an interpretation. This is why two people can read the same thing and have two different reactions to it: they each have their own schema.

The concept of schema also relates to a concept that I mentioned in Chapter Two, "The Principles of Reading Instruction." In that chapter, I discussed how you learn new things based on what you already know. What you already know is part of your schema.

The Goal of Comprehension Instruction

The purpose of comprehension instruction is to help students make a justifiable, personal interpretation of a text. The interpretation will be based on the information in the text according to the student's schema. Let's look at the key words in this definition.

> *Justifiable:* demonstrate knowledge of the content and make a reasonable, logical conclusion about the information in the text
>
> *Personal:* based on the student's (not the teacher's) schema

In practical terms, you ask the student, "What does this mean to you and why?" In this process, you do two things.

First, you help the student understand the words, information, and concepts in the text. You help the student learn what the words mean, as well as the who, what, when, where, why, and how of the information in the text. Too often, comprehension instruction stops here. Once a student demonstrates knowledge of the content, the teacher moves on. This is very low level understanding, but there is more!

Second, you help the student determine the quality, value, usefulness, and application of the information. Even young children can do this. For example, with young readers, you might ask the following questions:

- Why do you think the character did...? (fiction)
- Have you heard any other stories like this? (fiction)
- Did you like it? Why? (fiction and nonfiction)
- Would you like to try something like this? Why? (fiction and nonfiction)
- Do you think this is true? Why? (nonfiction)
- Do you want to know more about this person or information? Why? (fiction and nonfiction)
- What would you do in this situation? Why? (fiction and nonfiction)

The basic approach to helping students comprehend a text is to ask the students what the text means to them and then to ask them why. Of course, you want to make sure students understand the words and information. These are steps towards comprehension. You want them to make sense of what they read. Once students get to that point, however, the focus of comprehension instruction shifts to evaluating and analyzing the information, combining or synthesizing the information with information from other text or experiences, and deciding what to do with the information.

And then you ask them, "Why?"

As it turns out, "why" is a powerful word. To answer that question, a student has to

- understand the content,

- think critically about the information,
- consider how the information relates to what he or she already knows,
- make logical conclusions, and
- communicate his or her ideas convincingly.

If a student can do this, you can conclude that the student comprehends the text. The goal of comprehension instruction is to make sure students can answer, and justify their answer to, "Why?"

Breaking Down Comprehension Skills

Reading comprehension has four sub-skills, three that lead to comprehension and one that occurs throughout the reading process. They are as follows.

Understanding: knowing the content

Making sense: considering the content and message

Applying: deciding what to do with, and using, the information

Self-monitoring: reflecting on whether or not you understand what you are reading

When we say that a student comprehends a text, we mean that the student can do the first three sub-skills. These sub-skills are not separate, and all three are required for comprehension.

Not only are these three skills necessary for comprehension but also they are used in order. First, a student needs to know and understand the content. The student needs to understand what the words mean and what information they communicate. Second, a student needs to reflect on and interpret the content. But there is one more step: applying. Once the student understands the content and has analyzed it, the final step is to determine what to do with the information.

The fourth sub-skill, self-monitoring, is what strong readers do while they are using the first three sub-skills. It is how students know they are doing the first three.

Explaining These Sub-skills

Understanding: In the context of reading comprehension, "understanding" means knowing what information the text is communicating. The first stage of understanding is knowing what the words mean. The second stage is putting those words together to understand the information. Understanding is about the facts being presented, the information about who, what, when, where, why, and how. Understanding, alone, is not comprehension. Instead, understanding is the first necessary step towards comprehension.

Making sense: With the sub-skill of making sense, students think critically about the information. This is the sub-skill where the concept of schema is so important. Making sense of the information requires the student to interpret the text. In fact, based on the discussion above, a student cannot help but to interpret the information.

When I discuss Bloom's Taxonomy and Depth of Knowledge a bit later, you will see that making sense is most of what students do once they understand the content. Making sense is the "heavy lifting" in comprehension because it requires the most mental work. In the meantime, here is a partial list of the types of activities students engage in when they are making sense:

> categorizing, comparing and contrasting, concluding, critiquing, discriminating, evaluating, generalizing, interpreting, modifying, organizing, predicting, proving, recommending, supporting, synthesizing, testing, verifying

Also, in the section below on discussion, which is the most effective strategy for comprehension instruction, you will see that discussion provides the training, opportunity, and support for making sense.

Applying: After figuring out what information is in the text (understanding) and interpreting the text (making sense), the student has to determine what to do with the information. This stage can seem tricky because it contains so many possibilities. Depending on the age and reading level of the student, the student may apply his or her understanding in the following ways:

- Decide to learn more about a topic, read more within the genre, or select other texts from an author;
- Participate in a discussion;
- Solve a problem or make a justifiable decision;
- Present the results of the analysis (through a speech, essay, picture, graphic, etc.) and try to convince other people that the student's interpretation is correct;
- Follow the steps, advice, or perspective presented by the author;
- Create new ideas or change current ideas based on the information;
- Write something that demonstrates support, disagrees, or presents alternatives; or
- Conduct a demonstration.

This is a very small sample set of possible applications, but it demonstrates that students have many options for applying what they read.

Application has one more purpose: assessment. When students can apply the information in a text, they demonstrate that they understand the content and have reflected, analyzed, and interpreted it. When students apply the information, you can assess their comprehension.

You can assess their understanding of the content, which is the first sub-skill, but you can only assess their comprehension when they use the sub-skill of application.

Self-monitoring: Self-monitoring is the most important sub-skill. As you read, or as a student reads, self-monitoring helps you decide whether or not you understand what you are reading. Strong readers do this continuously. Even while they are reading, they are assessing their level of understanding. They are always thinking about and questioning their understanding, always asking themselves, "Do I understand this?"

If they answer “yes,” they continue reading. If they answer “no,” they determine why they do not understand and seek to improve their understanding. Perhaps they do not understand the words, in which case they use various vocabulary skills to learn what the words mean. Perhaps they have missed some important information, in which case they re-read prior sections of the text. Perhaps they do not understand the concepts, in which case they may do a little research or review what they know and how it relates to the new information.

Good readers stop reading when they do not understand, and they do something to correct their lack of understanding. Because they are monitoring their understanding, strong readers are more likely to comprehend the text.

Weak readers, on the other hand, just keep reading. When they finish reading, they are left wondering what it was about.

Self-monitoring is a learned behavior. Although some students learn to do this naturally, many students need encouragement and activities that require them to stop reading and to gauge their understanding. Some students may believe that they will be punished or ridiculed if they admit to not understanding, so they keep silent. Others may have learned the mistaken idea that the point of reading is to get to the end, so they do not bother stopping to confirm their understanding. In most cases, however, weak readers simply never developed the habit of questioning their understanding.

Students can develop this habit if instructional activities require self-monitoring and if you model, encourage, and reward self-monitoring. It is the single most important difference between strong and weak readers.

Principles for Comprehension Instruction

Comprehension seems like a big, vague concept because it depends so heavily on personal interpretation of text. There might not be a single correct answer to the question “What does it mean?” Rather, students, like all readers, may have differing responses, interpretations, and reactions to the text they read. If they can show with logic, experience, and evidence that their interpretation is plausible, if they can demonstrate that information in the text supports their interpretation, they comprehend the text.

The instructional strategies and corresponding activities discussed later will describe how you can help students develop a personal, justifiable interpretation, which is the definition of comprehension. They are guided by four overarching principles for comprehension instruction.

1. Instruction needs to build background knowledge.
2. Instruction needs to require student work.
3. Instruction needs to facilitate collaboration.
4. Instruction needs to support differing opinions.

Build Background Knowledge

Whether students are reading fiction or non-fiction, they will need to know something about the topic. For example, they will likely need at least the following.

Nonfiction: basic information about the theme, issue, or topic; awareness of related concepts; historical information about the concepts; experience with the subject of the text; knowledge of basic vocabulary related to the subject. Without prior knowledge, readers cannot grasp the ideas and concepts being described and cannot determine either the quality of the information or how the information can be used.

Fiction: exposure to the genre; experiences, environment, or conditions similar to the character's; knowledge of the historical period (if relevant); understanding of the context or situation in which the events occur. Without prior knowledge, readers cannot understand the events described in the text and cannot form impressions of why they happen.

The first stage in comprehension instruction is to make sure students have the prior knowledge they need. Until that happens, students are not ready to comprehend the text. You want to know what students already know, and then you help them address any gaps in knowledge. You can help students build their background knowledge before they read the text, but I do not recommend it. New background knowledge is only relevant while students are reading the text. It does not have a purpose until students encounter information that requires it.

A better approach is to gauge students' understanding throughout the reading process and then help them build the background knowledge they need when they experience comprehension problems. Rather than waiting until students finish reading the entire text or designated portion (such as a chapter), provide multiple opportunities to stop reading, discuss what they understand or not, ask questions about the content, and gain the knowledge that will help them interpret what they are reading.

The only exception is vocabulary. Before beginning to read a new text, take time to identify and study unfamiliar words. See the chapter on vocabulary for information and strategies for studying vocabulary prior to reading.

Require Student Work

The best advice I ever received during teacher training was in the form of a question: What do you want students to do? More than 30 years later, I still consider this question every time I provide training and professional development for adults. This question is particularly important to comprehension instruction.

Because we are helping students develop their own justifiable interpretation, they need to do most of the work. The work can take many forms, some of which you will see later in the sample activities. It includes graphic organizers, reflective writing, research, and discussion. Overall, we want students to think critically about the text, consider how the content aligns with their schema, engage in analysis and further study, and determine how they can use the information. We can not do this for them: they have to do the work themselves.

Facilitate Collaboration

As mentioned in chapter two, "Principles of Reading Instruction," students learn to read by working together. This is especially important for comprehension. The more perspectives, experiences, ideas, and information a student has available when reading a text, the more able the student will be to create a justifiable interpretation. Of course, students bring their own schema to the process, but they can also draw from the schema of other students. For this to happen, students need to collaborate on comprehension activities.

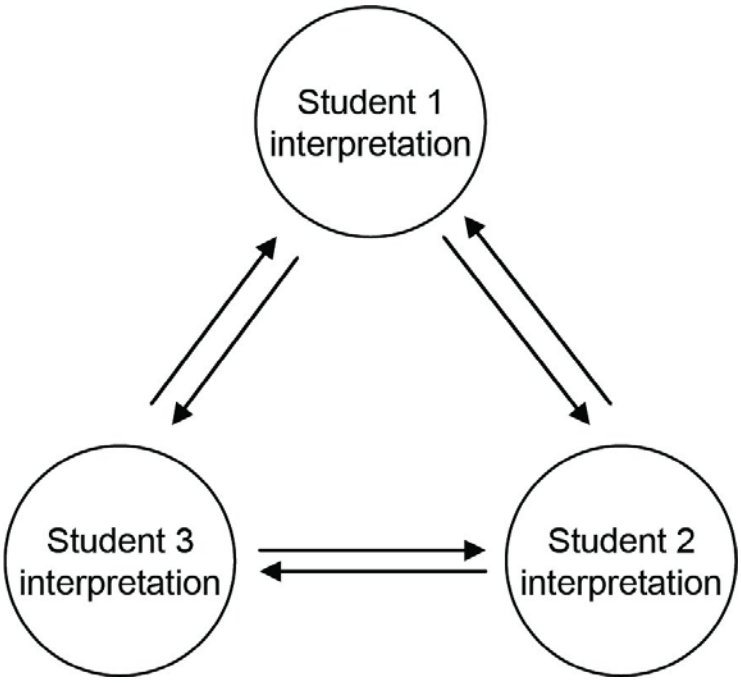
Your role, then, is to design instructional activities that student can work on together. There is a place for individual work, but students will benefit from combining their individual efforts into a collaborative effort. They can compare their ideas, share information and perspectives, and constructively criticize their own and other students' ideas. For example, you might have students create their own graphic organizers, which they can then discuss with other students to create a graphic organizer that encompasses their mutual ideas.

The next section, "What Works for Comprehension Instruction," will address the strategy of discussion. Discussion is the most powerful strategy for improving reading comprehension. The main reason why it is so powerful is discussion allows for sharing ideas and information to help all participating students deepen and strengthen their comprehension of the text and develop a personal, justifiable interpretation. Students cannot have discussions alone. They must do it together.

Support Differing Opinions

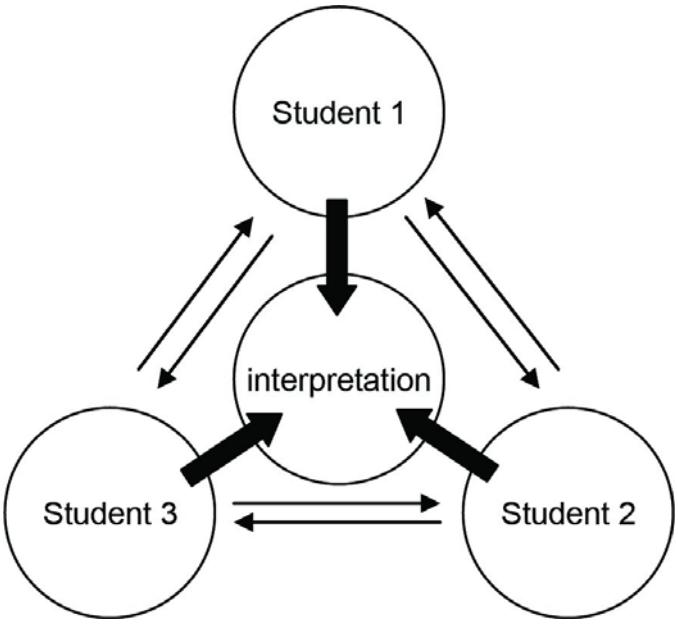
The goal of comprehension instruction is not for all students to agree, whether with each other or with you. The goal is to help students develop an interpretation that they can justify. When student work collaboratively, when they are asking questions and providing ideas, when they are adding to their knowledge and to each other's, when they are providing their interpretations receiving feedback, they will develop and adjust their interpretations until they are able to justify them.

This process will have one of two outcomes. Either students will develop a shared interpretation or they will develop differing interpretations. If, following discussion, students have differing interpretations of the text, then the result looks like this:



As depicted here, students are sharing information and ideas with one another, but they still apply their individual schema to create different interpretations.

On the other hand, if they find a common interpretation, then the result looks like this:



As depicted in this image, students are sharing information and ideas with one another, but they create a common interpretation of the text. Very often, students will begin with their individual interpretations and then, through collaboration, modify or enhance their understandings to reach a shared conclusion about the text.

Both are acceptable, and both outcomes should be encouraged. In fact, differing opinions provide great opportunities for critical analysis. Students can compare and contrast their ideas, identify strengths and weaknesses of others' ideas, and learn to argue constructively to support their own ideas. And that leads to comprehension.

What Works for Comprehension Instruction

If you could do only one thing to help students develop comprehension, I would say read with students and talk about what you read. Although that would be an exceptional beginning, it would not be enough, nor is it the only strategy for helping students develop their comprehension. And, quite frankly, it would be rather boring to do only that.

When we consider the definition of comprehension and the instructional principles for comprehension, we see that a variety of strategies will be effective.

Six Sample Strategies for Comprehension Instruction

- Discussion
- Graphic organizers
- Retelling & summarizing
- Writing
- Pre-questioning and prediction
- Comprehension self-monitoring

Discussion: Discussion is the number one strategy for helping students improve their comprehension, and I will address it in much greater detail later.

In brief, discussion is the opportunity to share ideas and information, listen to others' ideas, support or oppose those ideas with reasons, and ask and answer questions. Participating meaningfully and constructively in a discussion requires a student (or anyone!) to maintain a respectful attitude, to focus on the topic and not the person, and to demonstrate no small amount of humility.

The two most important things to remember about discussion are as follows.

1. Students should be encouraged to discuss with each other, as opposed to simply answering the your questions. Your questions may lead to discussion among students, but answering questions without follow-up discussion is assessment, not instruction.

2. Questions, both the yours and the students', need to address the multiple levels of Bloom's Taxonomy or Depth of Knowledge. The who, what, when, where, why, and how types of questions are the lowest level of discussion, not only because they focus on recall rather than comprehension but also because they lead to right vs. wrong answers and not interpretation. (More about this later.)

Graphic Organizers: When you read, your brain makes categories of details and facts, mental links between various disparate bits of information, groups of similar types of information, pathways representing order and sequence, and connections between words and approximate meanings. This is how your brain makes sense of so many details and so much information. This is what brains do, and they are typically very good at it. But they need help. How should the information be connected? What is the similar information? How should information be sequenced? And so on.

We can use graphic organizers to help our brains collect, sort, categorize, and connect information in a useful manner. The basic principle is this: we organize the information graphically to learn how to do it mentally. This is brain training. Obviously, as we become adult readers with strong reading skills, we do not need to do this, although many people may take notes or make outlines while reading. (I do this sometimes if I am having difficulty understanding technical or highly conceptual information.)

The other value of graphic organizers is that they serve as communication tools for sharing one's ideas with other people. You can use them to present information (for example, graphs) and to focus and organize your thoughts as you speak about a topic (for example, flow charts).

Graphic organizers come in many different forms. A quick Internet search will provide you with many samples. As you consider which types of graphic organizers you want students to create or complete, first consider what purpose they will serve and what you want students to learn. Once you determine the learning objective, then select the type that will be most useful. Do not select graphic organizers because they are pretty or fun. Select them because they are appropriate for the learning objective.

Sample Learning Purposes	**Example Graphic Organizers**
sequence of events	plot line
relationships between people	bubble chart
order of steps and options	flow chart
relationship between ideas	concept map
compare and contrast opinions or perspectives	Venn diagram

Students can create or complete the graphic organizers on their own or together. If they work on them alone, then they should do one of two things as a next step:

1. compare them with other students' graphic organizers and, through discussion, create a common graphic organizer on which they can agree, or
2. share them in small-group discussion to help present their ideas and to understand other students' ideas.

The one thing they should not be asked to do is to turn them in for grading. You might be able to give a grade for completion, but it has no value for helping students strengthen their ideas or improve their comprehension.

Retelling and summarizing: You may have heard the adage that the best way to learn something is to teach it. Retelling and summarizing are two ways that we apply this adage to comprehension instruction. These two skills are related, but they are different.

Retelling focuses on content information. When students retell text, they have to recall key facts and ideas, and they have to put them in sequence. They also have to distinguish between important and non-important information. (For example, retelling the story of Homer's *Ulysses* would include important events that took place at each island he visited on the way back to Greece.)

Summarizing focuses on concepts. When students summarize text, they have to think about the themes, purposes, intentions, categories of information, as well as key information that demonstrates those concepts. They also have to group information into broad categories that encompass a collection of facts and information. (For example, a summary of Homer's *Ulysses* would discuss that Ulysses visited multiple islands on the way home to Greece and ran into serious trouble at each one that only he could solve through bravery, cunning, and luck.)

Retelling is a challenging skill, but summarizing is even more difficult. For younger students, learning to retell the content may be sufficient. A common retelling task for students is to have them relate the story, information, or key information in a certain number of words, 50 to 200 or so. As students get older, however, and can start exploring themes and concepts, they should begin working on summarization skills.

Design activities that require one or both of these skill sets, such as writing or discussion. Students may need to reflect on the text first, such as through using a graphic organizer. Additionally, to assist in this process, consider asking specific questions about the text and have students include their answers in their retelling or summary.

Most importantly, retelling and summarizing require an audience, whether one person or many. After students retell or summarize, they should participate in follow-up discussion with other students, perhaps with some specific questions from you to help guide the discussion.

Writing: When students write about what they have read, they have to recall and reflect on the information, and they have to figure how to communicate their ideas clearly. These are all important steps for developing comprehension.

You can approach this instructional strategy from many different perspectives, such as asking students to write their impressions in reading journals, to respond to open-ended questions, or to develop a theme and write about it. Younger students can do this, too. For example, you can ask them to draw the scene that they think is most interesting and then explain why they choose it. The point of writing as an instructional strategy is for students to reflect on—and communicate about—on the text.

Writing can be a solitary task, which makes it incomplete as a strategy for developing comprehension. After students write, they need to share or present their ideas to other students for discussion, feedback, and constructive criticism. I would also recommend that before students write, they also engage in collaborative work, such as developing a graphic organizer of ideas to include in their writing piece. Ultimately, writing as an instructional method, needs to be embedded in a broader, collaborative set of activities.

Pre-questioning and prediction: "What do you want to know? What do you think is next?" These are two powerful questions to ask students as you help them develop their comprehension skills. To answer either of these questions, students have to think critically about what they already know, whether about the author, the information, or the characters. They have to look for patterns in the text and make an evaluation of the author.

The follow-up instructional activities are based on similar questions. "Were your questions answered?" "Did you learn what you expected?" "How accurate were your predictions?"

Answering these questions is sophisticated, but students of all ages can do it. The most important benefit of asking these questions is to help students to develop the habit of asking them when reading alone.

Comprehension self-monitoring: Of all the skills students need to improve their comprehension, self-monitoring is the most important. I discussed self-monitoring in the section on comprehension sub-skills, so why is it also here under strategies?

For every instructional activity in which students are reading, you want to include specific points for students to stop reading and assess whether or not they understand what they are reading. Students need to develop the habit of questioning their own understanding, which means you have to keep providing opportunities for students to ask, "Do I understand what I am reading?"

Often, the first time a teacher gauges a student's level of comprehension is during some form of application or assessment. This is too late. If asked, most students can state whether or not they are understanding the text. The problem is that students might not stop to consider their understanding, and they forge right ahead to get to the end. You need to help them ask the question for themselves.

There are many ways to do this. Of course, if students are reading aloud, you simply stop them and ask, "What do you think that means? What do you know about [blank]?" You also need to include opportunities to monitor their understanding during other types of comprehension activities. For example, when students are creating graphic organizers, they can leave blanks for unknown information, include questions they want answered, or create a T-chart of information

they understand and do not understand. If students are retelling or summarizing, orally or in writing, you can have them include a list of "things I don't understand."

As you can see, comprehension self-monitoring is not a strategy that you use by itself. It is a strategy that you embed throughout the other strategies.

Sample Activities for Comprehension

Most of the comprehension lessons you plan will incorporate more than one strategy (and they should all include comprehension self-monitoring and discussion). For example, if you have a writing activity, you may have students "pre-write" by collaboratively developing a graphic organizer, and you may follow the writing activity with discussion or a follow-up written piece in which students discuss how their ideas compare with other students' ideas.

The sample activities below generally correspond to a single strategy, but a well-designed lesson will have students perform several activities to address multiple strategies.

Strategy	Sample Activity Types	Comprehension Sub-skills
Discussion	Creating questions	All sub-skills
	Group brainstorming and decision making (e.g., nominal group technique)	
	Structured debate	
	Discussion board / forum	
	Read-respond-share	
Graphic Organizers	Plot lines	Understanding
	Timelines	Making sense
	Semantic maps	
	Venn diagrams	
	T-charts for comparison	
	Cause and effect charts	
Retelling &	Gallery / book walks	Understanding

Summarizing	Book/story review	Making sense
	Group-generated choral read	
	Snowball discussion	
Writing	Reflection journal	Making sense
	Comic strip	Applying
	Book/story review	Self-monitoring
	Response to higher-level question	
	Promotional posters	
	Discussion board / forum	
	Sticky notes	
Pre-questioning and Prediction	KWL chart (know, want to know, learned)	Understanding
	T-chart for questions and answers	Self-monitoring
	Posing research questions to other student groups	
	Completing stories	
Comprehension Self-monitoring	Thumbs up / thumbs down	Self-monitoring
	KWL chart	Understanding
	Research questions	Making sense
	T-charts	
	Paraphrasing	

The Number One Strategy: Discussion

Remember, the definition of comprehension is the ability to develop a justifiable, personal interpretation of text. It is the ability to say, “Here is what this means to me, and this is the reason why.” You can approach comprehension instruction in many ways (and you should), but one way is better than all others: discussion.

In chapter four, I discussed how discussion helps students develop their oral language skills, and

I described discussion like this: Discussion is not about responding to questions with the "right" answer. Discussion is

- sharing one's own ideas,
- asking questions,
- agreeing and disagreeing,
- explaining and defending a position,
- contributing more information, and
- expanding on others' ideas.

When students are discussing a text, not only do they refine their own ideas but also they help other student's refine theirs.

Discussion is more than sitting around and talking at random. As the teacher, your primary role during discussion is to ask questions that help students reflect on the content, their own ideas, and the information and ideas that other students share. To a lesser degree, your role is also to (a) provide additional background information and (b) encourage students to consider specific content within the text that might help them modify their interpretations.

To lead a productive discussion, you need a good plan and the right approach. The plan is the purpose you want students to accomplish and the questions you will ask to help them achieve that purpose. The approach is the way you interact with the students and get them to interact with each other. Stay away from the yes/no and true/false questions, and refrain from suggesting that students are right or wrong. Instead, ask them to justify their ideas and to respond to other students' ideas, provide additional information and ask them how it relates to their ideas, and get them talking to one another!

Before engaging students in discussion, consider the questions that you are going to ask. Certainly, you will want to ask questions to make sure they know the facts in the content, such as the who, what, when, where, and how information. Once you are past those questions, though, you will want to ask "higher order questions" that require deeper thinking and reflection about the text. Bloom's Taxonomy and Depth of Knowledge provide excellent guidance for these questions. They also give you clues about what students can do to demonstrate thinking at that level.

Bloom's Taxonomy and Discussion

By definition, "taxonomy" means a system for categorizing and classifying information. Bloom's Taxonomy (revised 2001) is one way to categorize various types of thinking skills and processes. For many years, until Depth of Knowledge gained popularity, I would point to Bloom's Taxonomy and recommend that teachers use it to plan for discussion. (I still do!) From the lowest-level thinking skills (#1) to the highest-level thinking skills (#6), Bloom's taxonomy is as follows.

Level	Central Question	Possible Actions
1. Remembering	What is the information?	define describe label list
2. Understanding	What messages or ideas does the text present?	restate paraphrase summarize defend extend
3. Applying	What can you do with the information?	organize choose produce solve decide
4. Analyzing	How does the information compare with other information?	categorize compare infer prioritize
5. Evaluating	What are the quality and value of the information?	judge critique consider recommend

		compare
6. Creating	How can you merge the information with information from other sources to create new knowledge?	compose hypothesize create combine predict

Notice three things about this taxonomy.

1. Knowledge is the lowest level. Recalling information requires the least thinking. If you never get beyond the knowledge level, you cannot comprehend text.
2. To attain the definition of reading comprehension, students must apply all levels.
3. Students can do many things to demonstrate that they addressing each level of the taxonomy.

Also, notice one very important issue about the levels. Although students can perform these actions in many different ways, they can perform them all during discussion. This is one reason that discussion is so powerful for developing comprehension. As you are planning for the discussion, make sure to include questions that will require students to match each level of Bloom's Taxonomy.

Can young children conduct such sophisticated thinking skills? Absolutely. Perhaps the depth and complexity of thinking will be low-level, but the thinking process can be high level. Let's say you just read two short books to a group of four-year-old children. Ask them to pick their favorite book and tell you why they liked it better. That is evaluation, the highest level of thinking skills on Bloom's Taxonomy.

Depth of Knowledge and Discussion

Depth of Knowledge is increasingly popular in education circles, and many teachers I have worked with are expected to use it by their school administrators. Dr. Norman Webb's Depth of Knowledge taxonomy helps educators develop assessments that measure different ways for students to demonstrate understanding.

The purposes of Depth of Knowledge in reading are (1) to describe how deeply students must understand the content and (2) to describe how in-depth students will share their knowledge.

How extensively will students be asked to demonstrate their understanding? For example, does an assessment (or lesson objective) require students to recall the facts or to use their knowledge

to create something new? The four levels of Depth of Knowledge (for reading) describe how deeply students must understand what they read and how extensively they use what they understand. The questions you ask during discussion determine what the students do with their knowledge and how they use their knowledge to respond.

The four Depth of Knowledge levels are as follows.

Level	Central Questions	Possible Actions*
DOK-1: Recall and Reproduce Knowledge	What knowledge has the student acquired?	recall answer quote list
DOK-2: Apply Knowledge	How can the knowledge be used?	interpret estimate classify predict
DOK-3: Analyze Knowledge	Why is the knowledge valuable, relevant, and useful?	revise assess compare conclude
DOK-4: Transfer and Extend Knowledge	How else can the knowledge be used?	synthesize connect design create

*Note: These actions represent various manners of demonstrating knowledge, not the complexity of mental actions or processes.

Notice two things about this taxonomy.

1. Each level assumes that the student already has knowledge and understanding of the text.
2. Each level has many actions for students to demonstrate knowledge at that level, and each action can be conducted in many different ways.

Bloom's Taxonomy or Depth of Knowledge?

When I provide professional development on reading, I discuss using Bloom's Taxonomy as a guide for planning discussion. Teachers can use Bloom's Taxonomy to pose discussion questions that require higher-order thinking skills and that lead to comprehension. I am regularly asked about using Depth of Knowledge instead of Bloom's Taxonomy. The answer, unfortunately, is "depends."

Bloom's Taxonomy and Depth of Knowledge have different purposes.

Bloom's Taxonomy	**Depth of Knowledge**
various levels of thinking skills	various ways of demonstrating knowledge
least to highest-order thinking skills	simplest to most extensive way to demonstrate knowledge
used to increase cognitive rigor	used to increase expression of knowledge

A common misconception about Depth of Knowledge is that higher levels actions require more sophisticated mental processes. They do not...at least not inherently. The level of thinking does not depend on the action but on what students are asked to do with the action. Level one is pretty straightforward, and requires the least mental processing, but after that, things get muddy.

The level of thinking required to perform some actions in level two may be more complex than performing some actions in level four. For example, a student may be able to connect (level four) knowledge about horses to a story about a character who rides horses, but might not be able to predict (level two) what will happen next in the story.

The so-called DOK wheel promotes this misconception by placing action verbs in various quadrants of the wheel. ("So-called" because Dr. Webb did not create it and has noted that it does not accurately reflect the principles and purpose of the Depth of Knowledge taxonomy.) Teachers might assume that if they have students perform certain actions, they are asking students to use different levels of thinking. In reality, the level of thinking depends on what cognitive processes are required to conduct those actions for that specific lesson. For example,

level three includes the verb "compare," but what are students comparing? Comparing the way two characters talk is not too challenging, but comparing the writing of two journalists to determine bias about a topic is quite challenging.

So the answer is "depends." If you are helping students develop the higher-order thinking skills for comprehension, use Bloom's Taxonomy. If you are helping students demonstrate their knowledge to different degrees, use Depth of Knowledge. Both taxonomies are useful as you engage students in discussion or other instructional activities for comprehension. Using either system will help students achieve the expectations of the other system.

If you use Bloom's Taxonomy to plan for discussion:

> prepare questions based on a variety of levels, aiming towards the top level. Start by assessing basic knowledge (level one), then advance upwards towards level six.

If you use Depth of Knowledge to plan for discussion:

> prepare questions that ask students to perform a variety of actions for each level, but sequence them from "easier" to "harder" questions. Start by assessing basic knowledge (level one), and then ask questions that reflect the other three levels, using your best guess to estimate which questions will be more difficult to answer.

What Does Not Work for Comprehension Instruction

Regardless of the strategies and activities you use, keep in mind the goal of comprehension instruction and make sure that what students do helps them achieve that goal. Not everything will. Listed below are some common strategies that do not help students develop a justifiable, personal interpretation of text.

Strategy	Reason Why It Does Not Work
Quizzes (computer based or otherwise)	Quizzes are assessment, not instruction. They address the lowest level of knowledge and thinking, recall, because that is the only thing they can assess easily. They cannot address higher levels of thinking or other forms of demonstration, and they do not include opportunities to explore ideas, refine justifications, or build background knowledge. To the extent they attempt to address higher levels, they still assume a single correct interpretation, regardless of the student's personal and justifiable interpretation. In brief, they do not and cannot measure comprehension.
Individual	I would call this minimally effective. A teacher and student can work

Instruction	together, can have discussions, and can perform a variety of tasks to demonstrate knowledge—all of which lead to comprehension. On the other hand, without other students or other people involved, the instructional value will be limited.
True/False, Yes/No, and Right/Wrong Questions	The point of comprehension instruction is not to get the right answer but to develop a defensible interpretation. Questions that only allow a "correct" answer do not lead to this goal.
Sustained Silent Reading (SSR)	SSR is not comprehension instruction. It might be a precursor to instruction, and it might be used as a first step towards developing comprehension, but it is not instruction by itself. This is not to say that students should not read to themselves, but this is not enough.
Arts and Crafts	Draw me a picture of.... Create a model of.... Etc. Although fun and engaging, these are not instruction. They might be used as assessment if students are required to apply their knowledge in some way or use them to respond to a higher-order question. You could also use them to increase students' interest in a text.
Round Robin Reading	With round robin reading, students take turns reading aloud. Round robin reading does not address any levels of Bloom's Taxomony and generally does little to improve students' knowledge of the content.

Companion Reading Components

Comprehension draws from several other reading components: phonics, vocabulary, and oral language. If you are focusing on helping students improve their comprehension skills, you will also need to provide instructional activities in phonics, vocabulary, and oral language at the same time. The activities for those components should apply to the text you want students to comprehend.

Phonics: Phonics leads to understanding the words in text, which means it leads to understanding the content of a text. This is part of the first step towards comprehension.

Vocabulary: Students have to know what the words mean, not just the dictionary definitions but how they are being used by the author or characters. By studying the vocabulary, students will have a better understanding of the content, which they will need to form an interpretation of the

text. Here, the study of vocabulary overlaps with the study of oral language.

Oral Language: How we interpret a text depends, in great part, on whether we understand what the author or characters mean by the words they use. We interpret the way language is used to form an interpretation of the text. Any study of how language is being used will help students form an impression or interpretation.