EBOOK

ROSENSHINE'S PRINCIPLES OF INSTRUCTION

The Teacher CPD Academy.

Rosenshine's 10 Principles of Instruction have become more and more widely used in education in recent years. They provide **a much-needed bridge between research and classroom practice**, and can be linked to countless effective Teaching & Learning strategies and theories.

A common mistake, however, is to see them as a checklist. So, in this ebook, we're going to cover each Principle, what they look like in practice, the research they're built on, and **how to make the best use of them in your school**.

A BRIEF GUIDE TO ROSENSHINE'S 10 PRINCIPLES OF INSTRUCTION

By teacherCPDacademy.com

Rosenshine's Principles of Instruction are becoming increasingly popular in education (with good reason). So, we wanted to provide a one-stop introductory brief outline of what they are, the rationale behind them and what they may look like in the classroom.

Rosenshine's Principles combines three distinct research areas (Cognitive Science, classroom practices, cognitive support) and how they complement each other by addressing how:

- People learn and acquire new information
- Master teachers implement effective classroom strategies
- Teachers can support students whilst learning complex material

Initially, Rosenshine proposed 17 principles. But in 2012, he revised it down to 10 principles that we should implement into everyday teaching for simplicity and clarity.

So let's explore those 10 principles in a bit more detail...

WHAT ARE ROSENSHINE'S 10 PRINCIPLES OF INSTRUCTION?

1. Begin a lesson with a short review of previous learning

Rosenshine suggests devoting between 5 and 8 minutes every day, preferably at the start of a lesson, to review previous learning. As our cognitive load is quite small, if we don't review previous

learning, then us trying to remember old information will get in the way of us trying to learn new information.

By dedicating a short period in each lesson to reviewing and evaluating previous academic performance, students will ultimately perform better. This is because students will develop a more in-depth understanding of syllabus material, make connections between topics, and enhance their critical thinking skills.

This could be through self-marking homework, correcting mistakes from the previous lesson, getting students to go over what they found difficult or asking them what they remember about the topic so far.

2. Present new material in small steps with student practice

Cognitive Load Theory explains how our working memory has a limited capacity. So, if students are presented with too much information at once, the brain suffers from something known as cognitive overload. This causes the learning process to slow down or even stop since the brain can no longer process all the information being presented at that one time.

As a result, this principle suggests that information should be presented in small steps. This can be done by removing any irrelevant material from your lesson plan and just focusing on what your students need to know.

3. Ask a large number of questions and check the responses of all students

Engaging in effective questioning techniques is one of the most powerful tools a teacher can use to enhance student learning and encourage them to explore a topic in more depth.

Questions allow teachers to:

- Establish how well a class is engaging with material
- Determine whether to dedicate more time to explore a topic
- Improve their students' Metacognition
- Encourage their students to be inquisitive themselves

- Enhance student learning by requiring them to practise retrieval

Rosenshine himself suggested six question templates that you can use to get your students to think more deeply about their learning as well as gauge their level of understanding. These are:

- *"What is the main idea of ...?"*
- *"What are the strengths and weaknesses of ...?"*
- *"How does this tie in with what we have learnt before?"*
- *"Which one is the best ... and why?"*
- *"Do you agree or disagree with this statement: ...?"*
- *"What do you still not understand about ...?"*

4. Provide models

Providing a way for students to make connections and links within their learning not only enhances their memory recall, but also allows them to understand new information quickly. You can do this by providing your students with the appropriate support.

Worked examples, demonstrating how to solve a problem, and thinking aloud are all modelling strategies that teachers can use to aid student learning. This is because it allows students to focus on the specific task at hand, reducing the overall demand on their cognitive load.

5. Guide student practice

We don't necessarily think that practice makes perfect, but it certainly helps.

This principle highlights the importance of providing students with enough time to ask questions, practise retrieval, or get the help they need. It's not enough for a student to learn information once, they have to keep rehearsing it through summarising, evaluating, or applying this knowledge. If teachers rush this process, then students' memory on lesson material will be diminished.

6. Check for student understanding

The sixth Principle may be the most important of the ten, as getting it right allows you to implement the other nine effectively – more on that later in this ebook...

Take intermittent periods throughout the lesson to stop and gauge whether students are understanding the learning material. You can do this by asking students to summarise the information, asking questions about the material, what their opinion is, or asking them to make a presentation.

By stopping every now and then, you can identify any misunderstandings students may have and clarify any points that your students are still struggling with. As a result, when you're ready to move on to the next topic, students have a clear foundation for their learning.

7. Obtain a high success rate

Research suggests that teachers who utilised effective teaching strategies were more likely to have students with higher academic success rates as evidenced by the work produced.

Rosenshine suggests that the optimal success rate teachers should strive for is 80% (coincidentally, a similar rate of optimal success when using multiple-choice tests). These success rates show that although challenged, students still understood and learnt new material.

8. Provide scaffolding for difficult tasks

When introducing students to more complex material, Rosenshine suggests utilising scaffolding in your lessons.

Scaffolding is when teachers facilitate students' gradual mastery of a concept or skill by gradually reducing teacher assistance. There is a shift of responsibility over the learning process from the teacher to the student. The temporary support it provides helps students reach higher levels of skill acquisition and comprehension that would have not been possible without assistance.

To use scaffolding effectively in the classroom, consider:

- Asking your students questions to check for understanding
- Using prompts such as “why” and “how” to help with retrieval
- Breaking a big task into smaller sections
- Providing students with worked examples or checklists they can refer to

9. Require and monitor independent practice

Although scaffolding is important, your students should also be able to complete tasks independently and take responsibility for their own learning. Developing independent learners is important as it helps students to stay motivated and improve their academic performance.

By practising a task over and over again in their own time (or “overlearning”), students develop greater fluency and automaticity in the skill they’re trying to learn. By overlearning a topic, students can recall this information automatically, keeping the space in their cognitive load free for new learning.

You can develop independent learners in your classroom by encouraging students to:

- Develop a sense of purpose
- Collaborate with others via group work
- Think reflectively
- Set goals

10. Engage students in weekly and monthly review

The final Principle is an extension of the first, but involves spacing out reviews of previous learning over weekly and monthly timeframes.

This combination of Spacing and retrieval is a strategy called successive relearning which involves spacing out the use of Retrieval Practice techniques on several occasions over time, until a certain level of mastery has been achieved (i.e., correctly retrieved from memory multiple times).

Successive relearning ensures students relearn content and maintain the ability to correctly retrieve this information. This

allows them to make connections between new information and old knowledge, enhancing their understanding of a topic. Setting your students weekly homework tasks, asking them to complete a monthly reflection, or doing a quiz each month are all effective ways of implementing this learning strategy into the classroom.

FINAL THOUGHTS

What may seem like common sense at first glance is actually underpinned by a vast range of scientific research married with best practice.

These principles are not intended to be seen as a checklist or requirement. Instead, they offer a framework or guidelines on how we may best help our students learn.

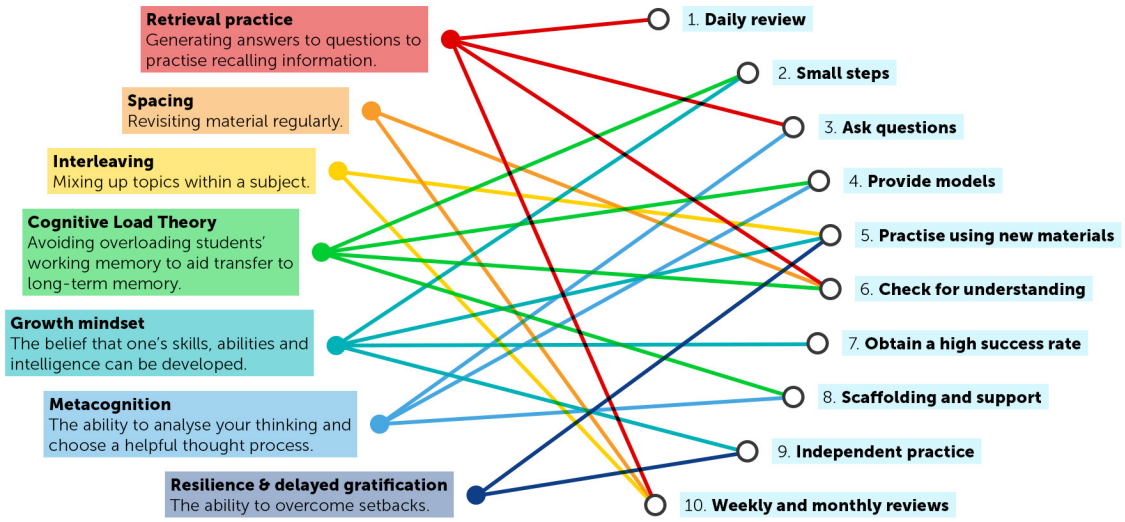
THE COGNITIVE SCIENCE BEHIND ROSENSHINE'S PRINCIPLES OF INSTRUCTION

By teacherCPDacademy.com

When we were reviewing Rosenshine's Principles, it struck us that it interlinks and is underpinned by several different elements of Cognitive Science. This blog explores what these are and how it all ties together - but first, here's a quick look at these links between Rosenshine's Principles and education theories:

The **cognitive science** behind **Rosenshine's Principles of Instruction**

by @Inner_Drive | innerdrive.co.uk



RETRIEVAL PRACTICE

Retrieval Practice, sometimes referred to as "the Testing Effect" is the act of generating answers to questions about previously-learnt materials.

Retrieval Practice is one of the most effective revision strategies a student can use to enhance their learning and memory recall. By recalling previously-learnt information, students create stronger memory traces which not only ensures that information will be transferred to their long-term memory, but also provides a stronger foundation for future learning.

How does it relate to Rosenshine's Principles?

Knowing about Retrieval Practice helps us understand the mechanics behind four of Rosenshine's Principles:

- ***Principle 1 — Begin a lesson with a short review of previous learning***: Teachers should dedicate time at the start of a lesson to review previous topics and assess students' understanding.
- ***Principle 3 — Ask lots of good questions***: To practise retrieval, Rosenshine's research suggests that the most successful teachers ask lots of good questions. On the other hand, the least effective teachers were the ones who only asked a few questions throughout the lesson.
- ***Principle 6 — Check for student understanding***: Teachers should stop every now and then to ask students questions, their opinion on the topic and to summarise information. This is so they can address any misunderstandings a student may have.
- ***Principle 10 — Engage students in weekly and monthly review***: Getting students to space out their use of Retrieval Practice techniques ensures students relearn content and maintain this information in their long-term memory.

Practical implications in the classroom

- ***Low-stress quizzes and games*** — Daily, weekly and monthly quizzes that don't contribute towards students' grades are a great way to monitor student progress, as Retrieval Practice works best when the stakes are low.

- ***Ask questions*** — To check for student understanding, teachers should ask questions such as "*why is this true?*" and "*why do you think that is?*", as this shows whether information has been stored in students' long-term memory. By generating an answer to these questions, students cement their understanding into their long-term memory.

- ***Get students to summarise*** — Summarising or paraphrasing information forces students to engage more deeply with the material they're learning and is a great way to assess whether they have fully grasped what you're teaching them.
By establishing the key concepts, irrelevant information is ignored, enhancing memory retention.

SPACING

Spacing means studying little and often instead of cramming it all into a single day. By Spacing out their learning, students forget and re-learn the information, cementing it into their long-term memory. Research shows that students who spaced out their learning performed 10% to 30% better in their final test results than those who had crammed their revision.

How does it relate to Rosenshine's Principles?

- ***Principle 6 — Check for student understanding***: Teachers should regularly check whether students understand previously-learnt material to assess if this information has been successfully and accurately stored in their long-term memory.

- ***Principle 10 — Engage students in weekly and monthly review***: Successive relearning (the combination of both Spacing and Retrieval Practice) allows students not only to maintain their ability to successfully apply their knowledge, but also to get a better understanding of the bigger picture.

Practical implications in the classroom

- ***Use the Cornell Note-Taking Method*** — Students should regularly refer back to their notes to answer the questions and define the key terms they wrote in the cue column. If answered incorrectly, students can refer back to the note column to relearn any forgotten information.

- ***Do weekly and monthly quizzes*** — When finishing a topic, teachers should give students an informal topic test to determine whether students have fully understood the topic or need more time practising.

INTERLEAVING

Interleaving focuses on individual study sessions. Unlike blocking, which involves dedicating a whole session to a single task or subject, Interleaving involves mixing up the concepts a student chooses to study in a single session.

One study showed that students performed significantly better in their final exam when interleaving their revision compared to those who blocked their revision. This is because Interleaving requires students to access previous knowledge to make links between different concepts, enhancing memory recall as a result.

How does it relate to Rosenshine's Principles?

- ***Principle 5 — Guide student practice***: During class time, teachers could go around and guide students' practice by asking questions, addressing common misconceptions and making links between concepts to enhance their understanding.
- ***Principle 10 — Engage students in weekly and monthly review***: When reviewing knowledge on a weekly and monthly basis, students can interleave the concepts that they choose to review rather than focus on one concept at a time.

Practical implications in the classroom

Interleaving is more efficient when the concepts being mixed are related. For example, when studying Biology, you can alternate between evolution and cell biology instead of focusing on evolution alone.

However, this isn't a cure-all and it's important to know when to use this strategy or not. Unfortunately, students often don't know what's best for their revision, preferring easy but ineffective strategies. Next time they are studying for a test, it's worth introducing your students to interleaved study and its benefits and encourage them to give it a try.

COGNITIVE LOAD THEORY

Cognitive Load Theory emphasises how our working memory is so small that if students are presented with too much information at once, their brain can experience a cognitive overload. As a result, the learning process gets slower or completely shuts down because the brain can no longer process all this information. Consequently, this information doesn't get transferred to their long-term memory.

How does it relate to Rosenshine's Principles?

- ***Principle 2 — Present material in small steps***: By breaking down a task into small, sequential steps, students are less likely to experience a cognitive overload as they're not having to pay attention to too much information at once.
- ***Principle 4 — Provide models and worked examples***: By providing students with a framework of what information they should include, they are less likely to learn redundant information. This frees up space in their working memory so they can focus on other things.
- ***Principle 6 — Check for student understanding***: Regularly assessing students' understanding before presenting new information means misconceptions can be addressed and students have time to process and transfer this information into their long-term memory.
- ***Principle 8 — Provide scaffolding***: Supporting students until they are confident with a topic reduces the stress placed on their working memory. This way, students aren't overwhelmed by the new topic.

Practical implications in the classroom

- ***Reduce the number of words on your slides*** — The less information you present to students at one time, the better. Having too much information on your slides means that students won't know what to focus on. Be concise so students can prioritise and effectively process the key points.
- ***Model task completion*** — Show students the steps they need to take to successfully complete a task and explain why each step is important. This way, students can obtain a better understanding of what they're meant to do and are less likely to make common errors.

GROWTH MINDSET

Growth Mindset can be defined as a person's belief that their intelligence and abilities can, with effort, develop and improve over time. It's the opposite of a Fixed Mindset, which is the belief that intelligence and a person's talents are set in stone.

Students with a Growth Mindset seek out better feedback, have strong self-regulation and are less stressed. It has also been indirectly linked to better academic performance.

How does it relate to Rosenshine's Principles?

- ***Principle 2 — Present material in small steps***: Breaking a big task down into smaller chunks can make it seem more manageable so students are less likely to get overwhelmed.
- ***Principle 5 — Guide student practice***: During this time, students can ask their teacher questions and get the help they need if they're struggling with a topic instead of giving up because they're stuck.
- ***Principle 7 — Obtain a high success rate***: Aiming for an 80% success rate allows students to improve academically without being overwhelmed by unrealistic expectations or getting complacent.
- ***Principle 9 — Engage in independent practice***: The only way to get better is to practice. Having a growth mindset by itself is not sufficient; it has to be accompanied by extra practice and effort.

Practical implications in the classroom

- ***Have students acknowledge their success*** — Students should take a step back and reflect on their progress every now and then. This will improve motivation as students will see all that they've accomplished by believing in themselves.
- ***The power of "yet"*** — Students should recognise that there's a huge difference between "I can't do this" and "I can't do this yet". Progress takes time: it's important that students reframe their weaknesses more positively.

METACOGNITION

Metacognition refers to a student's ability to critically analyse the way that they think so they can monitor and reflect upon their academic performance. Students with strong metacognitive skills choose the most helpful and appropriate strategies to complete a task, are less likely to procrastinate and have strong self-awareness.

How does it relate to Rosenshine's Principles?

- ***Principle 3 – Ask questions***: By asking metacognitive questions, students can monitor and review their performance.
- ***Principle 4 — Provide models and worked examples***: This way, students have a clearer understanding of the direction they need to go in to successfully complete the task and can unpack a task more readily.
- ***Principle 8 — Provide scaffolding***: Teachers can prompt their students to think about what successful strategies can be used to complete a task and to think critically.

Practical implications in the classroom

- ***Encourage self-questioning*** — Research shows that students who ask themselves metacognitive questions such as "what should I do?", "how is this similar to a previous task?" and "what can I do better next time?" whilst completing a task perform better academically.
- ***Verbalise your thought process*** — This can help students understand what a helpful thought process looks like and replicate it in future tasks.

RESILIENCE

Resilient learners are those that reframe stressful situations and mistakes as opportunities to become better learners. This is because students with high levels of resilience maintain their intrinsic motivation despite experiencing setbacks whilst working towards their long-term goals. Without resilience, students might instead get frustrated, believe that they can't get better, and give up trying.

How does it relate to Rosenshine's Principles?

- ***Principle 5 — Guide student practice***: The more practice students get at answering topic-related questions, the better equipped they are to use alternative methods when stuck as they have a stronger foundational understanding of the subject.
- ***Principle 9 — Engage in independent practice***: If students can overcome challenges and setbacks whilst completing work on their own in a non-stressful environment, they'll be less inclined to fall back on the "I can't" mentality when doing an exam.

Practical implications in the classroom

- ***Avoid "I can't"*** — When stuck on a difficult task, students shouldn't fall back on the "I can't" mentality and should instead ask themselves metacognitive questions such as "what could I do differently?" before trying alternative methods or techniques.
- ***Use flashcards*** — Students can revise using the Leitner System, which is a 5-step process that uses flashcards and a "learning box".

WHAT IS THE MOST IMPORTANT OF ROSENSHINE'S PRINCIPLES OF INSTRUCTION?

By teacherCPDacademy.com

Out of all ten of Rosenshine's Principles of Instruction, one is the most important. It is the principle that enables all the other ones to be implemented effectively. It is the foundation that dictates what information we present, when we present it, and how we do so.

The fundamental principle we are referring to is Rosenshine's sixth Principle of Instruction: Checking For Understanding.

Let's take a closer look at how Checking For Understanding plays a key role in the other nine principles, and why it is so important.

FIRST PRINCIPLE: BEGIN THE LESSON WITH A SHORT REVIEW OF PREVIOUS LEARNING

Rosenshine's first Principle suggests that you should spend the first 5 minutes of your lesson reviewing what students have learned in the previous one (we at the Teacher CPD Academy don't necessarily subscribe to the idea that you can put a set optimal time on this, but it's a good start).

The reason this Principle is important is because our working memory is quite small – if we don't review previously-learned information and consolidate it in our long-term memory, students are likely to forget it.

Checking For Understanding helps with daily reviews because it ensures that there are no misconceptions from previous learning.

This is important as it strengthens students' memory of learned information, but also ensures that they can learn new information that builds on top of the previously-learned knowledge.

SECOND PRINCIPLE: PRESENT NEW MATERIAL IN SMALL STEPS

Rosenshine's second Principle suggests that you should present new material to students in small chunks. This is because being presented with too much information at once will lead to cognitive overload, which may lead to forgetting.

When students are learning material in small steps, Checking For Understanding helps ensure that the previous level has been mastered, before going on to the next one. It therefore helps us decide when to progress the difficulty or complexity of the task appropriately.

THIRD PRINCIPLE: ASK HIGH QUANTITY AND QUALITY QUESTIONS

Using good questioning techniques can be a very effective way to get students to engage with the material (as well as accelerate their learning of it). There are many ways that they can do this, such as using Retrieval Practice and Elaborative Interrogation.

When asking students questions, Checking For Understanding allows you to identify which areas of knowledge students understand well, and which areas they may need to go over again. This will allow you to ask students high-quality questions that prompt retrieval of the information that students may need to learn.

FOURTH PRINCIPLE: PROVIDE MODELS AND WORKED EXAMPLES

Providing models for students about new information allows them to make better connections and links between topics. It also helps them learn the thought process behind the answer (this will help them transfer their knowledge to new situations). This can take the form of thinking out loud or Worked Examples.

By Checking For Understanding, it helps you to identify which model may be most appropriate for the level of the learner. This is because experts think differently to novices. Essentially, it helps you select the best and most appropriate model to explain a concept or idea.

FIFTH PRINCIPLE: PRACTISE USING NEW MATERIALS

Practising learned information through rehearsing, summarising, and applying the knowledge is the best way to consolidate student learning. This strengthens long-term memory of the learned information as using new materials to revise requires more cognitive effort.

Checking For Understanding helps us to check when students are ready to start practising with this new information. It allows us to deduce how well they have grasped the key concepts. This is key to helping them progress their learning.

SEVENTH PRINCIPLE: OBTAINING A HIGH SUCCESS RATE

Rosenshine suggests that teachers should be striving for a success rate of 80% from students – this of course can be tricky, with a class of students all being at different levels and stages of their learning journey. If the percentage is much lower, the task may be too hard, leading to demotivation. If the success rate is much higher, the task may be too easy, which can also lead to a loss of motivation.

Checking For Understanding is key here. By doing so, we are able to design the learning materials to find this Goldilocks Effect, and as such, pitch it just right. This means students still gain the benefit of confidence from having learnt the material, whilst also being challenged to stretch themselves.

EIGHTH PRINCIPLE: PROVIDE SCAFFOLDING AND SUPPORT

Rosenshine proposes the temporary use of scaffolds in the classroom. This is where teaching assistance on tasks is gradually reduced as students become experts on a new skill or concept. This way, students feel more supported and grasp concepts

a lot quicker. Rosenshine calls this process "*cognitive apprenticeship*", because students learn effective strategies to become better learners.

Checking For Understanding allows us to gauge the temperature in the room in terms of student learning. This, similarly to the second and fourth Principles (small steps and providing models, respectively), helps us know what to do next. It allows us to know when to remove the stabilisers and encourage them to ride solo.

NINTH PRINCIPLE: REQUIRE AND MONITOR INDEPENDENT PRACTICE

For us to say students have really learnt something on a deep level, they will eventually have to develop their skills and demonstrate their knowledge independently. Practising a task over and over again can result in automaticity, where recalling information takes little effort and is basically automatic. This frees up cognitive load for learning more information.

Checking For Understanding means that we don't rush to this Principle too quickly. Only when students are working independently do we truly see how much they have learnt and understood. Asking students to learn independently before they have a good understanding of a topic may be very overwhelming and could slow down the learning process.

TENTH PRINCIPLE: ENGAGE STUDENTS IN WEEKLY AND MONTHLY REVIEWS

Rosenshine's final Principle of Instruction recommends spacing out reviews of previously-learned information over the course of weeks or months. This combination of Spacing and Retrieval Practice is a strategy called successive relearning, and is very effective for retaining information in the long-term memory.

Checking For Understanding helps ensure that the learning has stuck. It allows us to differentiate between "I have taught them it" and "they have learnt it".

If nothing changes in long-term memory, it is difficult to say that anything has been learnt. By checking their understanding, we

see what information has been cemented and ingrained in their long-term memory.

FINAL THOUGHTS

Rosenshine's Principles of Instruction play a very important role in learning. And on reflection, we believe Checking For Understanding plays a very important role within each of the other nine Principles.

If we nail this Principle, it provides us with a strong base for all the other ones to work effectively.

6 QUESTIONS ROSENSHINE SUGGESTED YOU ASK YOUR STUDENTS

By teacherCPDacademy.com

Arguably one of the most powerful and effective elements of Rosenshine's Principles of Instruction is the importance of asking questions.

But are some types of questions better than others? Let's take a quick look at Rosenshine's Principles before highlighting six questions he recommends we use in the classroom to help students think more deeply...

WHAT ARE ROSENSHINE'S PRINCIPLES OF INSTRUCTION?

Rosenshine's 10 Principles of Instruction come from three research areas:

- Cognitive Science
- Classroom practices
- Cognitive support

These principles aim to address how people learn and acquire new information as well as how teachers can implement effective classroom strategies. Currently, these principles are becoming increasingly popular in education - and with good reason: they are offering a much-needed bridge between research and practice.

Rosenshine's third Principle of Instruction in particular is all about asking a high quantity of high-quality questions. As learning itself cannot be directly observed, asking questions can help you check your students' understanding.

WHAT TYPES OF QUESTIONS SHOULD YOU USE IN YOUR LESSONS?

There are different types of questions that students generally get asked within their lessons. These include both factual and process questions.

Factual questions

These types of questions require fact-based answers. For example, it could be specific questions about the material that was just taught or more broad questions such as asking a student to summarise the content.

Using factual questions allows you to use Retrieval Practice, which is the process of generating an answer to a question. One benefit of doing this is that recalling previously-learnt knowledge can create stronger memory traces, making it more likely to be transferred into your students' long-term memory.

Process questions

Process questions allow students to explain the process they used to answer the question that was given to them. These types of questions can be used to help your students self-reflect and develop their metacognitive skills. Developing these skills are not only useful for their academic performance but will help them become independent learners, be more resilient and develop more grit.

DO THESE QUESTIONS WORK?

In a study, teachers were either trained to use more factual and process questions or did not receive any training before teaching students new material.

Researchers found that students whose teachers received the training had much higher scores on the test than those who did not. Therefore, it seems that using these two types of questions can help your students gain more from the lesson.

WHAT ARE ROSENSHINE'S SUGGESTED QUESTIONS?

To help build on this, in his seminal paper, Rosenshine listed several questions that he thinks can help develop student learning. These include...

1. What is the main idea of ...?

This is a type of factual question. By implementing this question in the lesson, it can promote Retrieval Practice. It would be helpful to use this question after teaching new material, as it will allow students to consolidate their learning and check their understanding.

2. What are the strengths and weaknesses of ...?

This type of question will allow your students to evaluate a topic. It can help encourage deeper thought into the material, which would help them learn the topic better.

3. How does this tie in with what we have learnt before?

Using this question in your classroom will encourage students to make connections between the two topics, helping them remember the material better.

4. Which one is the best ... and why?

You can use this type of question when comparing two different things, as it would encourage your students to be inquisitive. For example, it can be used when learning about different types of energy sources.

The addition of "why" to the question helps your students engage more deeply with the topic and elaborate on their answers. It can also allow the students to explain the process they used to answer the original question.

5. Do you agree or disagree with this statement: ...?

This question encourages group work and helps prompt a discussion about the statement. In turn, it can improve your students' overall learning experience as well as their ability to overcome conflict.

6. What do you still not understand about ...?

Asking this question helps you establish how well the class engaged with the material and what is missing in their knowledge. It also makes it much easier to fill any gaps they may have in their knowledge. This also develops their ability to self-reflect, which can help improve their grades.

FINAL THOUGHTS

It may sound simple to ask a lot of questions during your lessons, but asking the right ones can help your students engage more with their learning.

Using Rosenshine's suggested questions allows you to understand how well your class has engaged with the material, prompt the use of Retrieval Practice and help develop your students' metacognitive skills.

5 THINGS YOU SHOULD DO DURING YOUR DAILY REVIEW, ACCORDING TO ROSENSHINE

By teacherCPDacademy.com

Rosenshine's Principles of Instruction are a huge area of interest in education at the moment, thanks to all the practical implications and impact they can have for teachers and students alike.

The first of these principles suggests that lessons should begin with a daily review of previous learning, which can improve knowledge of past information and also lead to easier recall. Daily reviewing of old information can also facilitate the learning of new and related information.

But how can you actually do this in the classroom? Here are five ways you can prompt daily reviewing...

WHAT ARE ROSENSHINE'S PRINCIPLES OF INSTRUCTION?

But first, a quick recap. Rosenshine developed his 10 Principles of Instruction based on research from three main areas:

- Cognitive Science, which focuses on how the brain acquires new information.
- Classroom practices, which look at the most effective teaching strategies that lead to high student achievement.
- Cognitive support, which researches which instructional procedures, such as talking out loud and scaffolding, have the best outcome on student achievement.

Rosenshine's Principles of Instruction are being implemented by teachers across all disciplines and education levels. They are

bridging the gap between education and research, in a way that we can ensure that applying his principles in the classroom will have a positive effect on students.

HOW CAN YOU FACILITATE DAILY REVIEW?

Rosenshine's first Principle is to "*review learning at the start of the lesson*". This is because research shows that our working memory is small and easily overloaded, which means that students are likely to have forgotten new information from the last lesson and would struggle to recall it without a review.

We know that daily reviewing is important not only to remember information, but also to learn new information. We do this by building on what we already know, so daily reviewing will help create a solid foundation that your students can build upon during the rest of the lesson.

When it comes to how to review learning with your students, you have some choice. Rosenshine himself suggested five strategies you could use...

1. Correct homework

Correcting homework tasks during class time can encourage students to review what they have learned well or not so well. Looking over mistakes they made allows students to evaluate how well they are learning. This develops their metacognitive skills and helps them identify the areas of knowledge that they need to go over.

2. Review concepts and skills used in the homework

Although correcting homework is useful to pinpoint specifically which answers were wrong and which were correct, reviewing which overarching concepts and skills used in the homework is also important.

This allows students to recognise whether the mistakes they are making on the homework tasks are one-off mistakes or whether they have misunderstood a concept or skill.

3. Ask students to identify points of difficulty

Finding out where your students struggled helps identify which skills need more practice, and which information needs to be reviewed. This gives you the opportunity to re-explain concepts your students found difficult before it becomes a bigger problem. It can consolidate their learning, especially if the lesson relies on previously-explored concepts.

4. Review material where students made errors

Mistakes are not inherently bad – they are a signal to students that they have not fully grasped a particular concept or an idea. Sometimes, failure can help students to develop resilience, motivation and determination.

Identify the errors your students made, and use it to prompt what to review. This will help you ensure that they understand necessary information and will learn new information more easily.

5. Review material that needs overlearning

Overlearning is the idea that certain skills can become automatic, freeing our working memory capacity. Overlearning and becoming experts in certain basic skills can form the foundation for future learning.

Reviewing material that needs overlearning can emphasise the importance of mastering these skills and lead to academic success not only in the present, but also in the future. So, even if your students fully understand a concept and make very few mistakes with it, sometimes, it may be worth reviewing it again and again to make it "second nature".

FINAL THOUGHTS

Rosenshine's first Principle of Instruction is all about reviewing material. Conducting a daily review for just a few minutes before beginning a lesson has been shown to improve academic performance by relieving some of our cognitive load and ensuring students aren't basing their future learning on mistakes.

5 WAYS ROSENSHINE SUGGESTED YOU ENGAGE STUDENTS WITH QUESTIONS

By teacherCPDacademy.com

Are you tired of the lingering silence you get after asking your class a question, forcing you to pick someone to answer? You're not alone - but thankfully, Barak Rosenshine has highlighted five potential solutions for this problem.

Before we dive in, let's have a look at Rosenshine's Principles of Instruction, why questions are important to use in the classroom and how you can get your students to respond to you.

WHAT ARE ROSENSHINE'S PRINCIPLES OF INSTRUCTION?

In 2012, Rosenshine proposed 10 Principles of Instruction that can be implemented into your everyday teaching. They aim to address how people learn and acquire new information. It also suggests how teachers can implement effective classroom strategies. As they offer a much-needed bridge between research and practice, they are becoming increasingly popular in education.

WHAT CAN YOUR STUDENTS GAIN FROM PARTICIPATING MORE IN CLASS?

Retrieval Practice

Generating an answer to a question, also known as Retrieval Practice, allows your students to recall previously-learnt

knowledge. This helps create stronger memory traces, making it more likely to be transferred into their long-term memory.

Develop metacognitive skills

Metacognition is the ability to critically analyse how you think and have more control over your thoughts.

Asking questions that encourage students to monitor or evaluate their learning can help them develop these skills. In turn, it can allow your students to become independent learners, be more resilient and develop more grit.

Improve their academic performance

Participating more in class by answering questions can help improve your students' academic performance.

In a study, researchers found that students who participated often performed 25% better on their exams than their peers who didn't contribute much in class. Therefore, encouraging less engaged students to answer more questions can have a significant impact for their academic performance.

Reduce their stress levels

After asking a question, it can be frustrating to look into the classroom and get a bunch of silent stares in response. This, on top of the long hours, huge workload and constantly adapting teaching environments can cause a lot of stress and may even result in burnout.

Therefore, by having your students participate more in class, it can help relieve a bit of the stress you may experience.

Promote a positive classroom culture

Having a good classroom culture can help your students learn and thrive. This includes valuing every student, building a learning-focused environment and promoting good behaviour. When students participate more often in class, they can feel psychologically safe and be more confident to ask questions.

HOW DOES ROSENSHINE SUGGEST YOU GET A RESPONSE FROM YOUR STUDENTS?

In Rosenshine's seminal paper, he listed several techniques that can help your students answer your queries under his third Principle of Instruction, which is all about asking many questions. So what are they?

1. Tell an answer to a neighbour

Using this strategy can help promote peer work, which has shown to have many advantages.

Firstly, it will allow students to develop a new perspective as they experiment with different techniques to come up with the right answer. It can also help students to develop better teamwork skills and improve their communication.

2. Summarise the answer in one or two sentences

This allows students to engage more deeply with the material and figure out the most important pieces of the information to use. This method is also used as a note taking technique, called the Cornell Note Taking Method.

3. Write the answer down before sharing it

Writing down the answer is particularly useful as it gives students a bit more time to think about the question and process it before sharing it with the class.

Having a few extra seconds, which is also known as having a longer wait time, can lead to greater gains in students' learning.

4. Raise your hand if you know the answer

This strategy is particularly useful for quieter students. Often, they might know the answer but not feel confident enough to say it in front of the whole class.

By asking them to raise their hand, they may feel less pressurised and therefore would participate more in the class. This is also useful for you, as you can easily check who knows the material and who doesn't.

5. Raise your hand if you agree with an answer that someone else shared

Using this final strategy will not only help promote a better classroom culture but also ensure that students are paying attention in class.

For the student who answered the question, it can also boost their confidence by visually seeing their peers agree with them.

FINAL THOUGHTS

As students become more engaged with the class, they can gain many benefits for their academic performance. One way to encourage this is by using Rosenshine's suggested strategies. In doing so, we can help facilitate discussion and increase the rate of learning that happens in your class.