

Surface, Deep, and Transfer Learning in the Visible Learning^{plus} for Science Classroom



About Corwin Advance

Corwin Advance courses are created from popular Corwin books in direct consultation with our author experts. Each course features learning and skills you can transfer to your classroom immediately, using video from classrooms showing strategies in action, along with interviews with authors, teachers, and students. All Corwin Advance courses are designed to support teacher license renewal and professional growth with the goal of improving outcomes for all students.

Accessing the Course

To access your course you will need an Internet-connected device such as a computer, tablet, or mobile phone. Courses run within the following web browsers:

- Chrome
- Firefox (Extended Releases are not supported)
- Internet Explorer 11 (Windows only)
- Edge (Windows only)
- Safari 10 and 11 (Macintosh only)

For the best experience please ensure that your browser is up to date.

Login

1. Go to <https://corwin.instructure.com>
2. Login with the email address and password you used to purchase the course.
3. If you don't remember the password you created, simply click *Forgot Password?* to reset it.

Materials

All required readings and videos are included in the course as digital files, including content from:

Almarode, J., Fisher, D., Frey, N., & Hattie, J. (2018). *Visible learning for science: K -12*. Thousand Oaks, CA: Corwin.

Course Description

The purpose of this course is to connect the Visible Learning research to instructional strategies that accelerate student learning in science education. You will examine dynamic and high-probability teaching strategies that support surface, deep, and transfer phases of learning and see these strategies in action with video from real classrooms.

Course Objectives

By the end of this course, you will be able to

- Articulate the key findings from Professor John Hattie's visible learning research;
- Demonstrate the importance of well-timed, effective strategies and instructional routines for science education;
- Articulate the concepts of challenge, self-efficacy, and learning intentions with success criteria as they relate to science learning;
- Employ science curriculum and instruction practices as they relate to the three-phase model (surface learning, deep learning, and transfer)

Course Outline

This course is self-paced. However, if you are taking this course for graduate credit, please be aware of the due date of the final assignment as this must be met in order to receive credit.

Key Dates

Many students find the courses most rewarding if they work through at a steady pace, setting aside dedicated time to take the course. Completing one module per week is a common goal.

Module 1



What Is Surface Learning in Science?

After completing this module you will be able to

- Examine the importance of science surface learning as the foundation for deep learning and transfer of learning
- Make a connection between teacher clarity and science surface learning
- Articulate some best practices for science surface learning

3.5 hrs
Typical time to complete

Focus	How Do You Define Surface Learning?	
Read	Science Surface Learning	
Watch A	Learning Progressions	
Watch B	The SOLO Taxonomy	
Watch C	Science Surface Learning	
Examine	Taking Exercises to Task	
Evaluate	SOLO Taxonomy Levels: Surface Learning	
Discuss	Multiple Representations	
Dialogue	Scientific Explanations	
Quiz	Understanding Surface Learning	Graded
Reflect	Refining Your Definition of Surface Learning	
Update Your Portfolio	Structure and Surface Learning	

Module 2



Deep Learning for Science

After completing this module you will be able to

- Define deep learning and how it occurs in science classrooms
- Summarize the importance of moving from surface to deep learning with an emphasis of science instruction
- Connect teacher clarity to deep science learning
- Articulate some best practices for deep learning in science

3.5 hrs
Typical time to complete

Read	Science Deep Learning Made Visible	
Watch	Are Learners Ready for Deep and Transfer Learning	
Check Your Knowledge	Visible Surface Learning	Submit for Feedback
Reflect, Evaluate, and Create	SOLO Taxonomy Levels: Promoting Deep Learning	
Discuss	Planning for Deep Learning	
Dialogue	Developing a Toolkit for Science Deeper Learning	
Quiz	Strategies for Deeper Learning	Graded
Reflect	Go Deeper With Your Learning	
Update Your Portfolio	Teaching With Deeper Learning in Mind	

Module 3



Transfer of Science Learning

After completing this module you will be able to

- Define transfer learning and how it occurs in science classrooms
- Summarize the importance of transfer learning within science content and process knowledge and skills
- Connect teacher clarity to transfer of science learning
- Compare and contrast the different types of transfer

3.5 hrs
Typical time to complete

Focus	Teachers Who Support Transfer	
Read	Promoting Transfer Learning	
Watch A	Teaching for Transfer	
Watch B	What Makes a Task Worth It?	
Check Your Knowledge	Types of Transfer	Submit for Feedback
Reflect, Evaluate, and Create	SOLO Taxonomy Levels: Promoting Transfer Learning	
Discuss	Adjusting Complexity for Transfer	
Dialogue	What Does Transfer Look Like in Your School	
Quiz	What Is Transfer?	Graded
Project	Recognizing Transfer	Submit for Grading
Reflect	Roads to Transfer	
Update Your Portfolio	Creating Opportunities for Transfer	

Module 4



Learning Intentions and Effective Feedback

After completing this module you will be able to

- Explain the role of feedback in surface, deep, and transfer science learning
- Create a metacognitive awareness plan for science instruction

3.5 hrs
Typical time to complete

Read A	Feedback: Surface Learning	
Read B	Feedback: Deep Learning	
Read C	Feedback: Transfer learning	
Watch A	Learning Intentions	
Watch B	Effective Feedback	
Examine	Feedback Alignment	
Check Your Knowledge	Feedback	Submit for Feedback
Reflect and Create	Metacognitive Awareness Plan	
Discuss	Questioning and Feedback	
Dialogue	Forms of Feedback	
Quiz	Transferring Learning	Graded
Reflect	Supporting Metacognition	
Update Your Portfolio	Metacognitive Awareness Plan	

Capstone		
Final Project	Putting It All Together: Unit Plan	Submit for Grading
Final Reflect	Consider Thy Impact	
Update Your Portfolio	Visible Learning in the Science Classroom	

InTASC Standards Alignment

Our courses have been aligned to the InTASC Mode Core Teaching Standards that outline what all teachers across all content and grade levels should know and be able to do to be effective in today's learning contexts. You can also view alignment to other popular frameworks here.

Standard	Covered in Modules
Standard 1: Learner Development	1-3
Standard 2: Learning Differences	2, 3
Standard 3: Learning Environments	1
Standard 4: Content Knowledge	1-4
Standard 6: Assessment	2, 4
Standard 7: Planning for Instruction	1-4
Standard 8: Instructional Strategies	1-4

Course Policies

Grading Policy and Rubric

Letter Grade	% Grade
A-	94-100
A	90-93
B+	87-89
B	84-86
B-	80-83
C+	77-79
C	74-76
C-	70-73
D*	65-69
F*	0-64

Component	Percentage of Final Grade
Final Project	40%
Final Exam	20%
Module Projects	30%
Module Quizzes	10%

**Students earning a D grade or below will not be eligible to receive a Certificate of Completion or graduate credit.*

Assignment Resubmission Policy

Students receiving a non-passing grade in the course have one opportunity to resubmit a project assignment to improve their grade. To resubmit an assignment please work directly with your course facilitator; you have seven days from completion of the course to resubmit the assignment.

Facilitation Model

Throughout your course experience, you will have a dedicated facilitator to answer questions and provide feedback on your submitted projects. Your facilitator will respond to any questions within one business day. All submitted assignments will receive written feedback and grades within 5 business days of their submission date.

Standards of Academic Integrity

Corwin Advance maintains high standards of academic integrity related to student academic performance in our courses. When enrolling in a Corwin Advance course you do so with the understanding and agreement to produce your own work, to submit assignments that you completed yourself, and to take quizzes and exams without the assistance of others. Course facilitators will enforce our Standards of Academic Integrity Policy and will report to Corwin all suspected violations. Read the full Standards of Academic Integrity Policy at the [Corwin Advance Academic Integrity web page](#).