CORWIN Advance

Course Syllabus and Requirements

Visible Learning^{plus} for Science, K–12

3 Semester Hours of Graduate Credit

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.

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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. This course is designed for teachers focused on science instruction across all grades K–12. Upon completion of this course, you will be prepared to analyze the impact of your own teaching practices on student progress and achievement and be able to apply your knowledge to guide students to become drivers of their own learning, regardless of the content area.

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 Visible Learning^{plus}?

After completing this module, you will be able to

- Articulate the key findings from Professor John Hattie's visible learning research
- Define what 0.40 effect size reflects and what effect size means

3.5 hrs
Typical time to complete

Read A	Why Visible Learning?	
Read B	Influences on Student Achievement	
Watch A	Know Thy Impact	
Watch B	Focus on Learning	
Watch C	The Visible Learning School: Shared Language of Learning	
Reflect and Create	Setting S.M.A.R.T.E.R. Goals for Your Visible Learning^{plus}	
Discuss	Learning From Visible Learning Research	
Dialogue	Sharing Visible Learning	
Quiz	What About Visible Learning?	Graded
Reflect	Putting Research Into Practice	
Update Your Portfolio	Visible Learning^{plus} in Practice	

Module 2

What Is Visible Learning^{plus} for Science?

After completing this module you will be able to

- Articulate the three phases of the learning process (surface, deep, and transfer learning) in science
- Compare and contrast different types of challenging tasks

3.5 hrs
Typical time to complete

Read	Visible Learning^{plus} for Science	
Watch A	Balancing Surface, Deep, and Transfer Learning	
Watch B	Finding the Right Amount of Rigor	
Watch C	Student Engagement Through Active Learning	
Examine	Maximizing Growth	
Reflect and Analyze	Goldilocks Planning	
Discuss	Learning From Visible Learning Research	
Dialogue	Sharing Visible Learning	
Quiz	Visible Learning^{plus} Concepts	Graded
Reflect	Making Tasks Purposeful	
Update Your Portfolio	Difficulty and Complexity in Science	

Module 3

Making Meaning of Science Learning

After completing this module you will be able to

- Articulate the role of social skills in science
- Define and give examples of teacher clarity
- Analyze and rationalize the purpose for teaching social skills in the science classroom
- Apply learning intentions and success criteria to instructional planning

3.5 hrs
Typical time to complete

Read	Science Is More Than Demonstrations and Labs	
Watch A	Making Meaning of Science Visible	
Watch B	Discussion in the Science Classroom	
Watch C	Making Learning Clear for Students	
Check Your Knowledge	Clear Learning Intentions	Submit for Feedback
Create and Reflect	Social Skills in the Science Classroom	
Discuss	The Power of Discussion	
Dialogue	Gaining Clarity	
Quiz	Key Concepts	Graded
Project	Teacher Clarity	Submit for Grading
Reflect	Becoming Clearer	
Update Your Portfolio	Teacher Clarity	

Module 4

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 5

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 6

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 7

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	

Module 8

Determining Impact

After completing this module you will be able to

- Articulate the concepts of meta-analyses and effect sizes as they relate to science learning
- Connect the general learning practices (challenge, self-efficacy, and learning intentions with success criteria) as they relate to the three-phase model (surface, deep, and transfer learning)
- Describe how evaluating science learning supports all learners as they move through the phases of learning

3.5 hrs
Typical time to complete

Read	Determining Impact	
Watch A	Using Assessment to Inform	
Watch B	How Do You Know a Student's Level?	
Examine	Using Effect Size Data	
Evaluate	As Fast as We Can, as Slow as We Must	
Discuss	Students Who Need Additional Supports	
Dialogue	Dispelling Myths of Common Practices	
Quiz	The Impact of Data	Graded
Project	Action Steps	Submit for Grading
Reflect	What's the Takeaway From Determining Impact	
Update Your Portfolio	Determining Impact on Science	

Module 9

Determining Thy Impact

After completing this module you will be able to

- Evaluate what works and what doesn't in your current instructional practices
- Analyze pre- and post-assessment data to determine the effect size of science practices

3.5 hrs
Typical time to complete

Focus	What Informs Your Choices?	
Read	Measuring Growth to Inform Instruction	
Watch	Engaging Students in Their Own Learning	
Check Your Knowledge	Pre- and Post-Assessment	Submit for Feedback
Evaluate and Reflect	Using Data to Know Thy Impact	
Discuss	Evaluations That Promote Visible Learning	
Dialogue	Collaborative Data Analysis	
Quiz	Assessments and Effectiveness	Graded
Reflect	Developing Your Expertise	
Update Your Portfolio	Making Your Learning Visible	

Module 10

Top Influences: Teachers and Response to Intervention

After completing this module you will be able to

- Identify strategies that research suggests are effective as well as those that are ineffective for teaching science
- Articulate how visible learning for science fits into an RTI approach to learning

3.5 hrs
Typical time to complete

Focus	Ineffective Practices	
Read	Response to Intervention in the Science Classroom	
Watch A	Visible Learning Defined	
Watch B	Revisiting Clarity	
Examine	Impact of RTI	
Create	Responding to All Learners	
Discuss	The Impact of RTI	
Dialogue	Effective Teachers	
Quiz	Effective and Ineffective Instruction	Graded
Reflect	Meeting Student Needs	
Update Your Portfolio	Your Response to Intervention	

Module 11

Mindframes for Visible Learning

After completing this module you will be able to

- Articulate the key attributes of the 10 Mindframes for Visible Learning
- Plan how to implement mindframes in your own professional practice

3.5 hrs
Typical time to complete

Focus	What Is Your Mind-set?	
Read	10 Mindframes	
Watch A	Mindframes Are a Frame of Mind	
Watch B	Lesson Planning With Mindframes in Mind	
Watch C	Embedding the Mindframes	
Examine	Giving Feedback and Using Feedback	
Evaluate and Create	Mindframes in Action	
Discuss	Mindframes in Practice	
Dialogue	I Am a Change Agent	
Quiz	When Mindframes Are Visible	Graded
Reflect	Making Mindframes Visible	
Update Your Portfolio	Mindframes and Teaching for Success	

Capstone

Final Project	Putting It All Together: Unit Plan	Submit for Grading
Final Exam	Visible Learning^{plus} for Science	Graded
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	1–6, 8, 11
Standard 2: Learning Differences	2, 3, 5, 6, 10
Standard 3: Learning Environments	3, 4
Standard 4: Content Knowledge	4–7
Standard 6: Assessment	5, 7, 8, 9
Standard 7: Planning for Instruction	1–7, 9, 10, 11
Standard 8: Instructional Strategies	4–7, 9, 10
Standard 9: Professional Learning and Ethical Practice	1, 8, 9, 11

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.

University Graduate Credit & Transcript

If you select a course that is eligible for graduate credit, that credit will be awarded upon successful completion of the course by the university you select upon purchase. Upon successful completion Corwin will communicate your final grade to the university and you will be directed to the university to register and access your transcript. This could take 2–3 weeks depending on the university, though you will receive a Corwin Certificate of Completion upon completion of the course. For more details on Corwin Advance university partners visit our web page, or if you have questions, contact advancesupport@corwin.com.