

Using Moderation as a Professional Development Strategy to Improve Grading Practices and Enhance Communication of Student Achievement

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Science Education for Public Understanding Program

- Science curriculum design and professional development
- Designing science curriculum, working with teachers, and supporting quality science instruction since 1983
- Major funding for curriculum work from the National Science Foundation



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Assessment and Grading

- Assessment and grading are linked but are not the same
- Effective assessment can be a powerful tool for improving student performance
- Ideas about both can be firmly fixed in the minds of teachers, administrators, parents, and students

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Concerns Based Adoption Model

	Stages of Concern	Expressions of Concern
IMPACT	Stage 6: Refocusing	I have some ideas about something that would work even better.
	Stage 5: Collaboration	I am concerned about relating what I am doing with what my co-workers are doing.
	Stage 4: Consequence	How is my use affecting clients?
TASK	Stage 3: Management	I seem to be spending all of my time getting materials ready.
	Stage 2: Personal	How will using it affect me?
SELF	Stage 1: Informational	I would like to know more about it.
	Stage 0: Awareness	I am not concerned about it.

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Hall & Hord, 1987

“Reclaiming the Metal” Activity Context

- “Reclaiming the Metal” falls in the middle of a series of lessons on the chemistry of materials
- In this activity, students investigate the reaction rate of a series of chemical reactions with a copper compound and use the information to answer the question,

“How should we handle copper waste?”

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Reclaiming the Metal

Challenge

- Which metal is best at reclaiming copper from the used copper chloride solution?

Investigate

- Compare the reactions of copper waste with three different metals —zinc, iron, and aluminum.

Procedure

- Appropriate safety precautions
- Place copper waste in waste containers
- Instead of forceps, use a spoon

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Analysis Question 3

- Working alone do the following:
 - 1) Write your own answer to Analysis Question 3.
 - 2) Score the six sample student answers.

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Scoring Guide : Evidence and Trade-offs

Level 4 Above and beyond	Student accomplishes Level 3 and goes beyond in some significant way.
Level 3 Complete and correct	Student compares options using accurate and complete evidence and takes a position supported by the evidence. Student describes trade-offs of his/her decision.
Level 2 Almost there	Student discusses one or more options using accurate or relevant evidence and takes a position supported by the evidence BUT reasoning is incomplete and/or part of the evidence is missing.
Level 1 On your way	Student takes a position BUT provides reasons that are subjective, inaccurate, or nonscientific.
Level 0	Student's response is missing or irrelevant.

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Assessment Moderation

- A process in which a group meets to discuss student work based on predetermined criteria.

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Score Student Work

1. Working alone, use the ET Scoring Rubric to score the work of Students A, B, and D. You can score more students if you have time.
2. After everyone in your group has finished scoring A, B, and D, record each group member's score on the moderation form.
3. Discuss the score you gave each paper, and try to reach consensus based on the ET Scoring Guide.

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Facilitating Assessment Moderation: Preparation

- Convene three to six teachers, and select a facilitator
- Each teacher submits samples of students' work from the same activity, task, and Scoring Guide
- Samples should include a range of scoring levels
- Students' names and scores should be removed
- Facilitator selects up to 10 papers and has copies made for each participant.

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Facilitating Assessment Moderation: Scoring

- Each participant works independently to score each student work sample and record score on the moderation form. There is no discussion at this time.
- Teachers report their scores and everyone records them on the form without comment.
- The group decides which samples to discuss, focusing on those with disagreement.

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MODERATION FORM

ACTIVITY _____

ASSESSMENT VARIABLE _____

STUDENT ID	MODERATOR						MODERATED SCORE
	A	B	C	D	E	F	

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Facilitating Assessment Moderation: Discussion

- The facilitator begins discussion with a paper that generated some disagreement, and then progressing to papers with greater disagreement.
- Participants discuss the reasons for their scores, and attempt to reach consensus, based on the scoring guide.
- Discussion may lead to questions about classroom instruction and opportunity to learn and about next steps to improve student performance.

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Facilitating Assessment Moderation: Consensus

- When consensus is reached, the final score is recorded on the moderation form.
- When consensus cannot be reached, the facilitator identifies the reasons for lack of consensus.
- Conclude with a wrap-up discussion of:
 - the criteria for each level of answer
 - what you have learned about students' thinking
 - feedback to be provided for students
 - possible modifications for future instruction

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Assessment Moderation

Teachers who consistently engage in assessment moderation:

- Assess student performance more consistently, effectively, confidently, and fairly
- Build common knowledge about curriculum expectations and levels of achievement
- Identify strengths and areas for growth based on evidence of student learning

(Little et al, 2003)

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Assessment Moderation

- Adjust and acquire new learning by comparing one's thinking to that of another student or teacher
- Share effective practices to meet the needs of all students, monitor progress, and celebrate growth

(Little et al, 2003)

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Assessment Moderation

- The scoring and interpretation of student work is heavily influenced by the teacher's judgment and conceptualization of assessments.

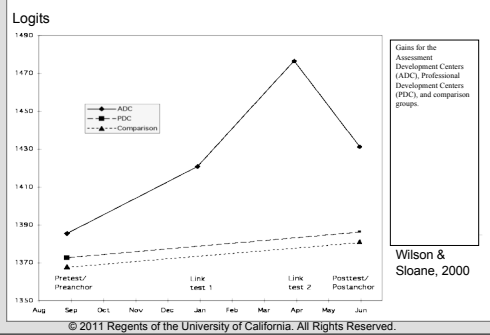
(Cummings et al, 2006; Elwood & Klenowski, 2002)

- Teachers trained in the collaborative moderation of student work improved in their understanding of standards, and also in their ability to identify gaps both in their teaching and in the programs they use.

(Klenowski et al, 2007)

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Assessment Moderation



The SEPUP Assessment System

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SEPUP Scoring Rubrics

- Content
 - Understanding Concepts
- Process
 - Organizing Data
 - Designing Investigations
 - Analyzing Data
- Making Evidence-Based Decisions
 - Recognizing Evidence
 - Evidence and Trade-offs
- Communication
 - Organizing Scientific Ideas (SI)
 - Communication Skills (CS)
- Group Interaction

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References

Cumming, J.J., Wyatt-Smith, C.M., Elkins, J., & Neville, M. (2006). *Teacher judgment: Building an evidentiary base for quality literacy and numeracy education*. Brisbane, Queensland: Queensland Studies Authority.

Elwood, J. & Klenowski, V. (2002) Creating communities of shared practice: assessment use in learning and teaching. *Assessment and Evaluation in Higher Education*, 27(3), 243-256.

Klenowski, V., Adie, L., Gunn, S., Looney, A., Elwood, J., Wyatt-Smith, C. & Colbert, P. (2007). *Moderation as judgment practice: reconciling system level accountability and local level practice*. Paper presented at AARE International Research Conference, Nov. 25-29, 2007. Freemantle, Western Australia.

Hall, G.E. & Hord, S.M., (1987). *Change in schools: Facilitating the process*. Albany, NY: State University of New York Press.

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References

Little, J., Gearheart, M., Curry, M., & Kafka, J. (2003). Looking at student work for teacher learning, teacher community and school reform. *Phi Delta Kappan*, 85(3), 185-192.

Marzano, R. J., (2006). *Classroom assessment & grading that work*. Alexandria, VA: ASCD.

Wilson, M., & Sloane, K. (2000). From principles to practice: An embedded assessment system. *Applied Measurement in Education*, 13(2), 181-208.

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