Effective Lesson Design: A Basic Conceptual Outline
Using Looking at Learning to Improve School Performance
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Preliminary thoughts:
While we see and hear the acknowledgement that effective classrooms must be student centered, a quick "Google" search shows most lesson designs address the teacher's actions during the lesson. After hours of observing classrooms using Looking at Learning©, we have come to believe that effective lesson designs focus primarily on designing the students' activities rather than designing what the teacher will do. Instead of designing the flow of a lesson as the teacher's minute to minute activities, observations indicate that effective lessons focus on what the students will do from minute to minute. Unfortunately, some observations find lessons lacking any design, and the minute to minute classroom activities simply happen.

By designing lessons that focus on the student's activities including listening, direct instruction, reading, writing, discussing, illustrating, conducting experiments, etc., teachers can create an interesting mix of activities that are likely to have high participation levels. Teachers in high performing classrooms tend to choose strategies that make sure all students are participating in the current activity. For example, during class discussions, we find these teachers using strategies to make sure that all students respond to all questions—not just the (smart) students that volunteer answers. One benefit of designing from the student's point of view, is teachers are less likely to design lessons that have the students do only one thing for an entire class and are more likely to design lessons that have a balance of activities to help engage the students in the learning. With this student focus, teachers can then start to ask what will be most effective in cognitively engaging students with the material they are studying.

Effective lessons focus on students thinking as the most important goal:
High performing classrooms primarily engage students in activities where they are asked to think about concepts and essential truths, extend this thinking to new situations, practice expressing their thinking and develop the several cognitive processes required to continually interact with new materials and situations. **Thus the goal of instruction is to get the students to analyze, think and extend their understanding.**

Thinking itself is a skill that must be taught and developed in order to make all learning efficient. We would argue that thinking and analyzing information should form the basis for the majority of instruction that takes place in our classrooms. Schools with the majority of the instruction focused on developing automaticity often show lower test scores and lower than anticipated growth. Thus, the proportion of time spent on developing thinking skills must be much greater than those that develop skills to automaticity, not the reverse.

A second lesson goal is one that gives students practice developing skills to automaticity:
Developing skills to some level of automaticity is often important if students are to attain some level of efficiency. However, it is important to not confuse the two goals; developing thinking skills and practicing to automaticity. While they are both important, they are not interchangeable. That is to say, practicing skills to automaticity does not necessarily lead to understanding (the ability to think coherently about a subject), nor does understanding concepts necessarily lead to developing automaticity.

Distilling lesson design to essential components:
We observe lesson designs used in high performing classrooms that can be described as having three large parts; a launch, student interaction with the material and a review. The following discussion of this simple three-part design addresses the important goal of cognitive processing. It is not designed to give a specific outline that must be followed lock-step in order to be successful, but rather to give guidelines for components that emphasize student cognitive processes.

We also have observed effective lessons with nested parts within the overall design. The scaffolding, the pre-teaching of essential vocabulary and background information is done using the same three part design within the overall lesson. These nested scaffolded mini-lessons often happen during the launch of the larger lesson. In many cases this scaffolding of background information will itself have a launch, student interaction and review or reflection all within the launch of the larger lesson structure. Effective lesson designs often are not linear—they may have multiple points for student interaction and review and reflection of the learning that is taking place.

We recognize the struggle between this design and designs articulated by others. The essential difference is point of view. That is, this lesson design is articulated from the point of view of the student and not the teacher. Most lesson designs are articulated from the point of view of the teacher. When one considers point of view, it becomes clear there is little conceptual conflict between this design and other designs, with the exception of the proportion of time allocated to the various lesson activities. It is felt that thinking about lesson design in these ways can add meaning to any lesson design format being used in schools.

Student activities; the building blocks of lesson design:
Looking at Learning describes a finite number of student activities upon which we can build lessons. These answer the question, "What will the students do during this part of the lesson?" Will the students be asked to listen, view something, participate in a discussion, participate in direct instruction, participate in guided practice, do some seatwork, read, write, conduct an experiment, conduct research, construct solutions using manipulatives, construct solutions to problems, assess work, illustrate something, present something, review work, or reflect on what they have learned? It is important to understand that all of these activities are viable and none carry a negative connotation unless they are done to excess. All lesson designs will likely have students listen, but if they are expected to listen for an entire class period, the design would likely be ineffective. Seatwork is often appropriately used to help develop automaticity. Lessons should use many different activities to give all students practice thinking, expressing their ideas and reflecting on their learning.

Cognitive purpose, the reason for choosing the student activities:
According to Barak Rosenshine, "the research on cognitive processing supports the importance of a teacher initiating activities that require students to process and apply new information."[1]

Research supports the need to design instruction that has high cognitive processing content. We have observed many classrooms with students spending time engaged in activities designed

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[1] Rosenshine, Barak (2002). Converging findings on classroom instruction. In A. Molnar (ED.) *School reform proposals: The research evidence.* Tempe, AZ: Arizona State University Research Policy Unit.

without consideration of the possible cognitive processing content a task could incorporate, or without clear understandings what cognitive processing they should do. The question to consider is, "Are students being asked to create or express some specific thought product during this part of the lesson?" To be effective, students must be aware of the cognitive purpose, the thought processing they are to be doing during a task

Looking at Learning describes a finite number of cognitive purposes that can be used in lesson design. These are; to explore big ideas or essential questions, contribute evidence, analyze information, explain thinking, ask questions, test understandings, construct understanding, evaluate work against criteria, revise work against criteria, create work based on criteria, or practice or rehearse something. Effective teachers have their students focusing on one or more of these cognitive processes more than 75% of the time during any lesson. It must be noted that many activities appropriately do not require a formal cognitive purpose. For example, listening to directions usually does not require the students to be thinking about concepts or evaluating something—but it is important for students to understand what they are supposed to be thinking about or trying to understand during the majority of their classroom time. Observation has shown that in ineffective classrooms, student usually are unaware of what they are trying to learn to think about.

Consider the following two instructions:
1. Read the following paragraph and then we will talk about it.
2. Read the following paragraph and determine what the main idea is and supporting details are. Be prepared to talk about why you chose the main idea and why you know that some things are supporting details.

The first instruction has no cognitive purpose from the students' standpoint, they will simply be reading without a knowing what they are supposed to do with the text.. The second instruction tells students to analyze the information and then to be prepared to contribute evidence and explain their thinking. Analyzing information is the purpose for the reading, and a whole set of other cognitive purposes can easily be explored in the followup activities.

Student grouping:
A design consideration for any student activity is how the students will be grouped during the activity. Will the activity be done as a whole class, in small groups or by each student individually? Efficiency and effectiveness are often determining factors. When giving directions or when doing direct instruction, we find whole class grouping to be efficient. However, when having students explain their thinking, it is often more efficient to have the students start by sharing their ideas in small groups so everyone has a chance to do an explanation.

Finally:
Teachers whose students make more than anticipated growth seem to have a foundational belief that all of their students can learn to think about the material and develop an understanding of the essential concepts that are being taught. These teachers express the belief that they just have to design the right mix of activities with cognitive purpose for all of the students to do well. This optimism probably has a great deal to do with the success of all of the students in the class, and should not be discounted.

The Three Part Lesson Design

1. **The launch or beginning. 10% - 30% of the class time is devoted to the launch.**
    The hook; why students would want to engage in the struggle to learn the material. The concept, big idea, or essential question to be explored during the lesson must be articulated and understood by the students. Essential vocabulary is addressed. The goal for the student analysis or interaction is articulated in relation to the concept to be explored. Teachers can often take the lead during the launch, but it is important to have students articulate what they will be learning and why they will be learning it in relation to the underlying concept. During the launch, it is important to have the students understanding the cognitive purpose for the instruction—what they are trying to figure out, and not to let the cognitive purpose be left to chance. During the launch, teachers will sometimes demonstrate, model or guide students through a sample. Essential scaffolding is also done as part of the launch.

2. **Student Exploration. 30% - 60% of class time is devoted to student exploration.**
    Students purposefully interact with material. This is the time where students analyze information, conduct experiments or practice skills. A substantial portion of this time needs to be devoted to working with other students – sharing, questioning, explaining or assisting each other. During this time, all students are given time to practice expressing their ideas using the academic language of the subject material and plan their report out of learning.

3. **Summarization and Reflection. 15% - 30% of class time is devoted to summarization and reflection.**
    Students engage in activities where they explain what they learned during the exploration and how what they discovered extends the understanding of the concepts covered during the launch. During this time, both correct conclusions and incorrect conclusions can be explored. The goal of this part of the lesson design is to give students practicing verbalizing what they have discovered and to give the class multiple views of how to interpret the work. Finally, it is important to give all students time to reflect -- silently, verbally or in writing about the impact of the day's learning on their understanding.

Summary: Lessons designs can be as simply linear or complex as the scaffolding requires. It is important to consider that some lessons may take more or less than a class period. However, it is important to give students adequate time to think about what they are learning and put that learning into context. We all too often see lesson designs where the teacher does all of the work by demonstrating, modeling or guiding the students through the work – and finally summarizing to the student what they were to have learned. The lesson design suggested here allows students to explore and create their own understanding under the guidance of the teacher.

We must emphasize the cognitive purpose of working in small groups is to give students the opportunity to practice communicating their ideas verbally and posing and answering questions with others, not simply splitting up the work between group members.

A final note concerning lesson goals of practice for automaticity, it is still very important for students to know how the skill or process being learned relates to the overall cognitive or thinking purpose of the lesson. A skill or process learned and refined without the student's understanding of when and how it should be applied is not useful in the future. Students need practice choosing and applying skills in new situations. Practicing skills without context is just not sufficient.

Effective Lesson Design

The output, summarization and reflection, feed into the next launch

Vocabulary

The Launch
Roots
Affixes

Interaction
Definition
Illustration

Sharing
Questioning
Explaining

The Launch
The Hook
Big Idea
Essential Question

Cognitive Purpose
(Student Articulation)

← **Scaffolding** →

Background Info

The Launch

Interaction

Summarization
Reflection

Student Purposeful Interaction

Analysis/Experiment/Practice
Illustration

Cooperative Activities
Sharing
Questioning
Explaining
Assisting
Preparing/Planning to:
Report out
Express Ideas
Incorporate Academic Language

Student's Sharing Learning
Student Summarization
Practice verbalizing discoveries
Conclusions--evaluation of conclusions
How discoveries extend understanding of concepts

Reflection
Impact of day's work on understanding
Writing, Verbalizing, Sharing

Looking at Learning
The Missing Assessment Tool Needed for Creating
High Performing Classrooms and Schools