DLSI NEWSLETTER

Supporting teaching and learning at La Salle

HAS THE INTERNET RUINED HOMEWORK?

Homework is often assigned so that students can practice. We then quiz and test to assess learning. The underlying principle is that being presented with problems to practice provides the opportunity for students to recall new knowledge, and generate solutions to proposed problems, cementing these new concepts into place. The assumption is that doing well on the homework translates to improved outcomes on exams…and for a long time this was, more or less, true. Students who did well on homework problems, generally did well on exams…but, something has changed.

In a fascinating study, [Glass and Kang (2020)](#) examined homework and test data from the first author's human cognition course, spanning the years 2008 - 2018. The general approach was as follows: pre-lesson homework questions, classroom post lesson questions, online homework review questions, then an exam. In general, there was a "monotonic increase in the probability of answering each successive question correctly…[and this] produced learning that ultimately increased the probability of answering the exam questions

correctly." That sounds reasonable, however a minority of students in their data set performed much better on the homework than the exams, indicating that the homework was not resulting in the necessary learning. Most surprisingly, however, over the 11-year period, there was a steady increase in this phenomenon, until it recently approached ***nearly half the class!***

The authors remind us that generating one's own response during homework, as opposed to looking up or copying an answer, leads to dramatically different learning results. They hypothesized that "an obvious vector for increasing copying versus generating over the last 11 years is the use of the smart phone and access to Google as an option for rapidly obtaining correct answers to homework questions." Indeed, students in the high homework and low test score group were "more likely to report higher frequencies of a copying strategy for homework, [the cost of which] was from half to a full letter grade."

Easy access to homework answers for practice problems, is only one issue. Artificial intelligence (AI) is now good enough (and it is improving dramatically) to create credible

papers and essays. In less than 5 minutes, I created a [Moonbeam](#) account, and chose to write an essay on "how to learn." I only had to input the title, audience, and 5 or 6 key words. I was immediately provided with an accurate outline and essay on "how to learn." There were no citations, but there were no factual or mechanical errors either. With very little time and thought, it could easily have been shaped into a better than passable paper.

Let me be clear, this is not a rant about the evils of technology. While some feel like these tools are [not yet good enough to be problematic](#), neither is this a column about outsmarting our students. No, we are pursuing larger game here, **a much more important and impactful idea**.

I find this a useful reminder that we have a significant responsibility (a) to help our students understand that **learning requires cognitive effort**, and (b) to teach (and assign homework) in a way that requires students to exert that effort in effective ways.

By cognitive effort, I mean helping students understand the necessity of really **working at retrieval and elaboration**. We have a responsibility to teach our content,

and we are also in a position to help our students better understand **how to learn it.** We can do this by both building [retrieval practice and elaboration](#) into our instruction, class activities, and homework, and by **giving voice to, and exemplifying, the effort required** to maximize the benefit these essential learning strategies.

For starters, a ["flipped classroom"](#) approach (or any modification of this concept), where access to the internet and other resources become beneficial for class preparation, rather than being a source of the correct answer, is helpful. Class time can then be used for clarification, retrieval practice, problem-solving, and elaboration. In classes where essays and problem sets are common, workshopping and group problem-solving approaches can shift the emphasis of using technology for efficiency at the cost of real learning.

Of course, students still need to practice, solve problems, and write on their own. However, it is up to us to communicate the necessity of cognitive effort, and to **create the climate that allows students to apply powerful learning strategies.**

No, I don't think the internet has ruined homework. I do appreciate these sorts of reminders that our job is not simply to communicate what we know to our students, then leave it up to them to figure out how to learn. As Pres Feden was always fond of putting it, **"our job is not to teach, rather it is to help our students learn."**

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ENGAGING PRACTICES ON CAMPUS
Dana Bitetti, Ph.D., CCC-SLP
Communication Sciences and Disorders writes:

In my undergraduate Language Development course, students complete a language sample analysis (LSA) project. This project models a real-word clinical task and students synthesize what they have learned all semester to determine if a child's language is developing typically. LSA is an essential part of our practice because speech-language pathologists gain information about all areas of a child's language development. Teaching LSA prepares students for graduate coursework and beyond.

Extensive training is needed to become proficient at LSA; therefore, **feedback from instructors is essential**. However, we know that students may not apply feedback if it is summative, only occurring after an assignment is submitted. Given the importance of LSA, I do not want students to put the feedback aside when the course ends, but instead scaffold their learning **using formative assessment**s, throughout the semester.

During the course, students submit

3 parts of the LSA project to be incorporated into a final project, and they receive feedback to improve their work. Consistent with best practice in formative assessment, each part carries a low weight relative to the final project grade. Students show their work, and I provide comments on their analyses. This allows me to see where students need support before moving forward.

To prepare students for each step of the project, we complete collaborative in-class activities aligned with the weekly topic, and I pinpoint where more guidance is needed. For example, when we learn about grammatical development, we calculate the analyses that determine if a child's sentence length is typical for their age. Students learn how clinicians apply LSA to the assessment of language disorders and learn why they are essential for children from culturally and linguistically diverse backgrounds.

Breaking down the larger project into smaller pieces has several advantages. Students use feedback to learn from their analysis errors, much of their project is done by the end of the semester, and my grading time is reduced because I have checked their work previously.

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Asking *students* for feedback provides them with voice and an opportunity to both seek clarification and tell you what is going well. A simple form like this can be used after each class. Begin the next class by responding to the feedback.

EDUCATIVE FEEDBACK

"Assessment" has been the academic buzzword in recent years. Many of us have scrambled to create measurable goals and objectives, often to meet the requirements of an accrediting body. We've been asked to align assignments with goals and objectives, and then provide evidence that our students are making progress. Assessment is clearly important, but what seems to have been lost in the conversation is a deep consideration of feedback; that is, the messages we give to students about their performance. These messages can scaffold, support, and inspire learning…or be unhelpful, create distance, and discourage engagement with us and our content.

Learning requires that we make use of feedback. From a cognitive perspective, that feedback is necessary for us to cement new knowledge into place by facilitating connections, and the creating new memory traces or cognitive cues. When learning how to *do something,* what we call procedural knowledge (driving a car…or using a complex piece of lab equipment), **specific and corrective feedback** from someone with experience is critical for the learner to make progress. When learning *about something,* what is known as declarative knowledge (facts and information), feedback that leverages **retrieval practice and helps us elaborate** is critical for learning.

In terms of learning, **assessment without feedback is useless**. Have you ever received (or returned) a paper with a letter grade only….or a "good job"….or "needs improvement?" Have you known (or do your students know) what to do next with that information?

Laura Reynolds, in this blog post, reminds us that our students want to know where they stand with respect to their work. Among her 20 suggestions for providing feedback, are several critical points: Focus on one skill or ability at a time. Provide genuine praise

and reinforce effort. Provide examples or models of excellence. Keep your non-verbal cues in check, as feedback comes in many forms. All of the suggestions in the post are easily added to one's repertoire, but there is one I like to keep in mind above the others: **All feedback should be educative in nature.**

The importance of helping students see what they *can do,* combined with corrective and supportive feedback that gives them insight into *what needs to be done* in order to continue their learning trajectory cannot be overstated. This is how we improve learning, increase engagement, and encourage persistence.

TO HELP THEM FIND THEIR TRUTH
Br. Don Alger, Instructor, Department of Chemistry and Biochemistry

"That which is of the utmost importance, and to which the greatest attention should be given in an Institute, is that all who compose it possess the spirit peculiar to it. That spirit is foremostly a spirit of faith, which should induce us not to look upon anything but with the eyes of faith, not to do anything but in view of God, and to attribute all to God. … Secondly, the spirit of the Institute consists in an ardent zeal for the instruction of learners to help them procure their salvation" (Rule, 1:6-12).

Aureli's statue of De La Salle in St. Peter's Basilica depicts the Founder as teacher to two students, one on either side, with his right hand and arm raised heavenward. The inspiration we draw here is that De La Salle did not see himself as the be-all and end-all of whatever students may need to learn. Rather, he directs them to Jesu Magister – he who "is so good that He wills that all of us come to the knowledge of truth … and that truth is God himself" (MTR, 1:1). Let us commit, then, to prepare our students through our salvific work of **teaching well so they find their own truths** as only God can reveal in their lives. *Live, Jesus, in our hearts forever.*