

## Improving Student Engagement with Direct Instruction

One of the greatest criticisms of Direct Instruction is that students are passive recipients of information. Yet students who are engaged in the lesson are not cognitively passive. Increasing student engagement, even in large classes can happen. Here's how.

**1. Use an Anticipatory Set.** Post your outline prior to class, helping students to focus on the agenda throughout the class.

**2. Add Visuals.** Use images, relevant news, and short videos throughout your instruction for high interest and engaging lessons.

**3. Question your students.** Engaging questioning strategies can bring your instruction to a new level. For some great ideas, click [here](#).

**4. Let Students Interact.** Small group discussions during the lesson help students make connections and support each other's learning.

**5. Ask for class feedback.** Real-time feedback using a survey tool during the lesson can allow you to both check comprehension and increase student involvement.

**6. Include Practice opportunities.** Have your students watch, then try out a skill.

**7. Provide Stretch Breaks.** Short physical activity breaks benefit learners cognitively and can increase learning efficiency. See the research support for this [here](#).



## The Merits of Direct Instruction Online or In Person

Have you heard that you should not be the "sage on the stage" but you should be a "guide on the side?" The implication is that direct instruction is a substandard model for learning compared to the problem-based and cooperative learning environment. The Direct Instruction model seems to have fallen out of favor, especially in subjects like math and other STEM classes. Yet there are merits of Direct Instruction.

**More Comprehensive:** Direct instruction is not just standing at the front of the lecture hall and giving a speech. Instructors must know the students, be an expert in their subject matter, and know how to vary the pace and level of examples to meet the needs of students. At the college level, content is intended to be rigorous and comprehensive, and the Direct Instruction model allows for the complete content to be addressed in each class, whereas group projects cannot possibly cover all learning objectives.

**More Equitable:** Direct instruction distributes content more equitably to students. All students receive the same information. Rather than relying on inexperienced students to assure the even playing field of learning for other students, the instructor has the far superior knowledge base, and can more easily recognize and address misconceptions, learning gaps, and remediation needs. The instructor also has the professional obligation to make corrections, whereas the peer in a group does not.

**More Consistent:** While problem-based learning can help students remember content in the context of experiences, students, even ones in the

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same group, do not always have the same learning experiences. Dominant, knowledgeable, and ambitious students tend to lead efforts of the group. If students lack the motivation, confidence, or the knowledge to think through solutions or contribute to discussions within a group, they "go along for the ride," resulting in inequitable learning outcomes. Direct Instruction provides a more consistent learning experience.

**More Efficient:** Just as learning from others' mistakes is more efficient than making those mistakes yourself, learning from others' discoveries helps us learn course content more efficiently than re-discovering those ideas for oneself. Students have been known to find inefficient algorithms for solving problems. True discovery and problem-solving also requires time to think, experiment, do research, and try out conjectures. Students only have a short time to make these discoveries.

**More Effective:** John Hattie, author of [Visible Learning](#), noted that Direct Instruction ranked far above problem-based and cooperative learning in his meta-analysis of over 256 factors related to student success. He stated, "Problem-based learning can work under the right conditions. However—and this is critical—it isn't particularly effective when students don't yet possess the knowledge, skill and dispositions needed to engage in an inquiry-driven investigation about a topic."

To be sure, problem-based learning has a valued place in the college classroom. Research has shown some learning benefits of the problem-based method. Students usually like the hands-on, real-world application of the course concepts. However, the direct instruction class is also a necessary and valuable part of the teaching and student learning experience, and should not be disregarded or disparaged.

Way to Succeed

Mindful Insights for Learning





# Improving Student Effort

Part 1 of a two-part series on improving student effort in your classes.

**Student effort** is something we hardly ever actually see, but we measure the effects of it when we equate it to performance on labs, tests, and exams. Low grades on assessments can be interpreted as the student applying insufficient effort to the learning process. The level of effort for students with high grades is much less clear. Well-prepared students with existing knowledge from prior educational experiences may not have needed to put in much effort to achieve a high grade.

**Students Need to Understand Effort:** When first-year students arrive on campus, they most likely come with a set of expectations for the level of effort they must apply to succeed in college, and most of the time, that expected level is far below what is actually required to be successful. Therefore, "... students and faculty may benefit from communication about grading procedures and policies, as well as [from]

a frank discussion regarding what faculty consider to be 'outstanding effort' in a class. Students likely do not know what workload is appropriate for college-level courses and often struggle because they do not know how to direct their effort."<sup>1</sup> (p. 15)

This quote reveals two distinct difficulties students have with applied effort in college classes.

**1. Students do not understand how much effort to apply toward studying.**

**2. If a student wants to improve effort, what do they do?**

**Instructors Need to Understand Effort:** If we are to increase student effort, especially in our low-achieving students, we must understand both the amount of effort students use and the actions taken by the student through that effort that result in learning.

**Commodity:** A commodity is something valuable or useful for an advantage. For a student, effort exerted for learning something new is certainly useful and valuable, and a true advantage for success.

**Capacity + Confidence = Motivation.** Students who do not believe they have the capacity to understand new material often lack the assurance that they can learn. This is especially strong in students who have math anxiety or have been placed in a class for which they are not prepared. The intimidation felt by these students is difficult to overcome and motivation to apply effort to learning wanes.

**Cognitive Load.** This is the amount of information that must be held in working memory before it is processed into long-term memory. The more information held in working memory, the more difficult the task is to process that information to learn it. Less-prepared students have greater gaps between present knowledge and prerequisite course knowledge than high-achieving, well-prepared students. Therefore, struggling students have a greater cognitive load, making learning new content more difficult. The uphill battle they engage in to achieve expectations is intimidating, and at times, overwhelming. These students often will reduce their efforts to sort out new material.

## How to Increase Effort through Increasing Confidence and Motivation

**1. Determine your students' level of understanding and adjust your instruction and assignments accordingly.** This can be a difficult balancing act, with certain content objectives required for your course. However, streamlining presentations for initial lessons gives students the opportunity to move information in to long-term memory before applying it to practical applications.

**2. Increase the frequency of problem-based learning situations while reducing the scope of each,** so that students are not overwhelmed with vast amounts of information required to find solutions.

**3. Vary the modalities of learning (visual, auditory, tactile).** When possible, limit competing modalities. This reduces cognitive load.

**4. Remind students that observing and doing are not the same.** They should take time on their own to make sure they can perform the skills and algorithms independently.

**5. Give students time to digest information before having to use it.** The flipped classroom, where students pre-learn content before coming to class is one way this can be accomplished.

**6. Provide sufficient practice opportunities.** Students need time to internalize information at a pace that suits them.

**7. Encourage your students!** Help them know they have the capacity to understand if they will practice their skills and to seek help if they don't understand.

<sup>1</sup>Zinn, T.E., Magnotti, J.F., Marchuk, K., Schultz, B.S., Luther, A., and Varfolomeeva, V. (2011). Does effort still count? More on what makes the grade. *Teaching of Psychology*, 38 (1), 10-15.

## Way to Succeed Can Help!

We designed Way to Succeed to accompany first-year math and other STEM classes. Our goal is to help your students become aware of and develop academic skills and strategies in a personal way while freeing you to focus on your math or other STEM content. The online program works outside of class, providing personal learning profiles and targeted actions for improvement, short, thought-provoking readings, videos, and short quizzes that highlight the skills, attitudes, cognitions, and learning strategies in which successful students engage so they can quickly make changes to become better learners.

# Pedagogy vs. Andragogy

**Pedagogy** is traditionally defined as the methods and practices of teaching children. Pedagogy involves teacher-created and directed experiences that imparts a broad-based curriculum covering a pre-determined content that is designed to prepare students for the next stage of education. Students are mostly dependent upon the instructor who prepares and delivers lessons. A teacher provides intermediate incentives and encouragements, well as grades typically based on academic performance. The motivation for the students to learn is earn a quality grade.

**Andragogy**, on the other hand, is defined as the methods and practices of teaching adults. This differs from teaching children in that adults come to a



classroom with life experiences that often relate to what they are studying. Adult learners know better how their current learning situation fits into academic and career goals, and that understanding creates an internal motivation and positive attitude that contributes to the independent nature of adult learning. The teacher of adults acts more like a guide or facilitator.

**Conclusion:** Know that many college-age students are not yet

the self-motivating and self-regulating adult-style learner when they arrive at college. They need a more guided and structured pedagogical approach if they are to be successful and if they are to adequately cover the

essential content of their intended major. Professors' expertise is indispensable for student learning and expected specific learning outcomes.

Throughout the process of a college education, professors should teach students the basic content of the curriculum but also move toward using a more andragogic approach to educating students as they progress towards graduation.

Pedagogy	Andragogy
Teaching methods and practices, especially of children	Teaching methods and practices of adults
Teacher directs transfer of knowledge, dependent on teacher knowledge	Independent, self-directed, cooperative learning
Teacher has control over learning experiences	Adult students have control over learning experiences
Rigid expectations of learning outcomes	Student creates own learning outcomes
External motivations (grades and other incentives are important to the learner)	Internal motivations (grades may not be important to the learner)

## Q&A About Way to Succeed

**Q: We already have a Student Success program at our college. What makes yours different?**

**A:** Way to Succeed was specifically designed for learning math and other STEM programs. It has several advantages over generic programs.

1. Designed to be used currently with any math or other STEM course. These courses are the freshman classes with the highest failure rates. We help where it's needed most.
2. Students **learn how to learn**, their greatest advantage for success.
3. Personalized for each student, whether you have 20 or 200 students in each of your classes.



4. Pairs well and supports existing success programs at your school.
5. Adaptable to the instructors' wishes. Our program runs by itself. You only set the due dates. Additional assignments for instructors who want more involvement are provided.
6. Nothing to prepare. All standard lessons are self-guided, have short readings, and student accountability components. Short videos explain the purpose behind the three included learning assessments.
7. Nothing to grade. All components are graded for you and averaged at the end of the academic term.
8. Low cost to schools and students.

## WATCH

### Current Industry Trends: Preparing Students to Become Independent

The very skills expected in an andragogous classroom are the same skills desired by employers.

- Self-directed
- Decision-making
- Organized
- Ability to Plan
- Works as a Team
- Communicates
- Accountable

As students work through their college years, they are shaped to mature in these ways. Way to Succeed can accelerate this process by informing novice learners how to attain the independent adult characteristics desired by employers. Check out what we have to offer at [waytosucceed.com](http://waytosucceed.com).



### QUOTE OF THE MONTH

“You don't become a good manager until you learn to manage yourself. The day you do, roads open up for you.”

— Hermann J. Steinherr





## Visit our Website

We offer a unique research-supported approach to help students become more independent and successful in your classes.

Visit [Way to Succeed](#) for more information about our product, pricing calculator, and how to order.

## Be ready for Spring Semester 2023 classes!

First-year, at-risk, and probationary students typically need more support than most other returning students, especially when these students enroll in online classes. [Way to Succeed](#) benefits all students with a personalized, stand-alone success program that works well with any mathematics or other STEM course. [Way to Succeed](#) helps your students develop their own self-regulating and metacognitive skills so they can become more independent and effective learners.

- Students learn how to learn, especially in their math or STEM class
- No grading required
- Personalized for each student
- Companion eBook with short quizzes for better student accountability
- Focus on improving self-regulation, time-management skills, metacognition, preparing for exams, and accessing extra help resources
- Research-based process showing improvement in grades
- Low department and per-student costs
- Compatible with any STEM text or curriculum, online or face-to-face
- Easy-to-access instructor reports
- Quick student set-up for your school or by class

## Upcoming Articles in the next issue of *Learning Insights*

1. Part 2: Improving Student Effort in Your Classes
2. One in Three: Some Noteworthy Statistics About our Students
3. What are the Changes in Colleges since the Pandemic?

....and more!

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Learning Insights Issue 11 November 2022



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