Effective Teaching in the Secondary Classroom

Amanda Lickteig

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Acknowledgements

Emporia State University

CRAIG Grant

As the cost of textbooks continues to be a significant obstacle for many of the nation's college students, the editor wishes to thank Emporia State University for the Class Resource Affordability Initiative Grant (CRAIG) that provided funding for the creation of an Open Educational Resource to be used with secondary education pre-service teachers of all disciplines in the Phase I course *ED 333: Principles of Secondary Education*.

Additionally, peer review is essential to upholding the academic integrity in publishing and this OER would not be the product it is without the valuable feedback of content-area experts. Thank you to the following individuals for contributing their time to enhance the field of teacher education.

- Dr. Erin A. Bronstein, University of Michigan-Dearborn
- Dr. Jamie Buckmaster, Oklahoma State
- Dr. Zeni Colorado-Resa, University of Oregon
- Dr. Alan English, Bethany College
- Mr. Mike Jones, Illinois State University
- Ms. Madisyn Shaneyfelt, Emporia State University
- Mrs. Deena Wilson, Emporia State University

We would also thank the initial readers of this pilot edition of the text during the 2023-2024 academic year. Your feedback on the content, layout, readability, and more will be instrumental in the revisions that occur for the second edition.

SECTION 1

The Changing World of Education

From one room schoolhouses to teaching through a global pandemic, education has seen significant changes over the past 200 years. In the sections that follow, we will provide a brief overview of recent education history in the United State, dig into the background of standards, and see how literacies and technology competencies have influenced our teaching in the last two decades.

A Short History of Education in the United States

1871 to 2021

Wendy A. Paterson

Education History United States Normal School

In 1600s and 1700s America, prior to the first and second Industrial Revolutions, educational opportunity varied widely depending on region, race, gender, and social class.

Public education, common in New England during this time, was class-based, and the working class received few benefits, if any. Instructional styles and the nature of the curriculum were locally determined. Teachers themselves were expected to be models of strict moral behavior.

By the mid-1800s, most states had accepted three basic assumptions governing public education: that schools should be free and supported by taxes, that teachers should be trained, and that children should be required to attend school.

The Normal School

The term "**normal school**" is based on the French *école normale*, a sixteenth-century model school with model classrooms where model teaching practices were taught to teacher candidates. This was a laboratory school where children on both the primary or secondary levels were taught, and where their teachers, and the instructors of those teachers, learned together in the same building.

Earlier normal schools were reserved for men in Europe for many years, as men were thought to have greater intellectual capacity for scholarship than women. This changed (fortunately) during the nineteenth century, when women were more successful as private tutors than were men.

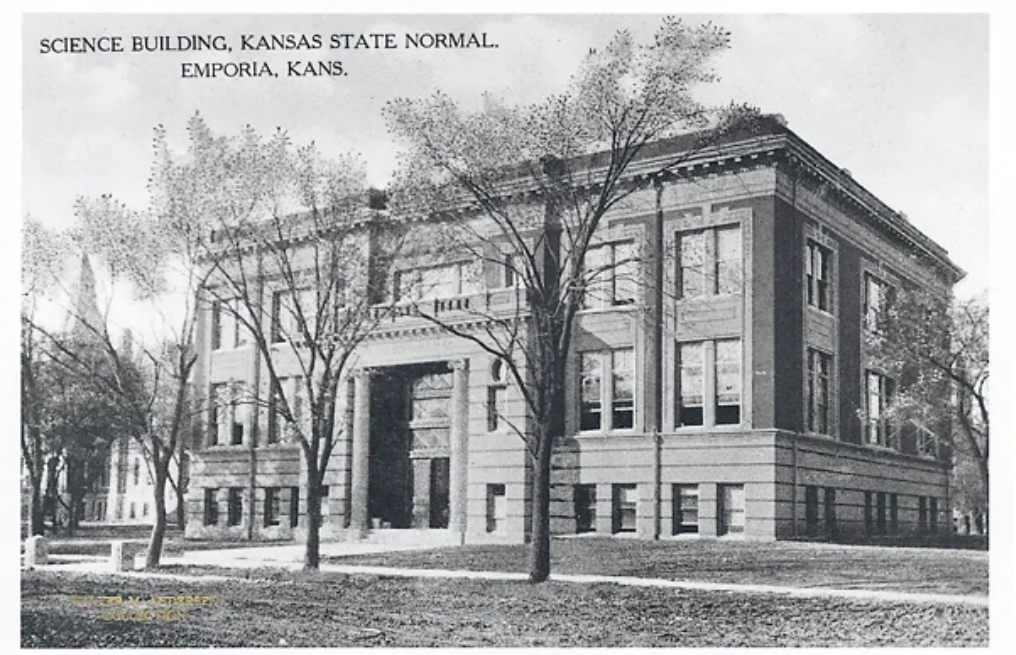
In the late nineteenth and early twentieth centuries, newly industrialized European economies needed a reliable, reproducible, and uniform work force. The preparation of teachers to accomplish this goal became ever more important. The process of instilling in future citizens the norms of moral behavior led to the creation of the first uniform, formalized national educational curriculum. Thus, "normal" schools were tasked with developing this new curriculum and the techniques through which teachers would communicate and model these ideas, behaviors, and values for students who, it was hoped, through formal education, might desire and seek a better quality of life.

In the United States, normal schools were developed and built primarily to train elementary-level teachers for the public schools. In 1823, Reverend Samuel Read Hall founded the first private normal school in the United States, the Columbian School in Concord, Vermont. The first public normal school in the United States was founded shortly thereafter in 1839 in Lexington, Massachusetts. Both public and private "normals" initially offered a two-year course beyond the secondary level, but by the twentieth century, teacher-training programs required a minimum of four years. By the 1930s most normal schools had become "teachers colleges," and by the 1950s they had evolved into distinct academic departments or schools of education within universities.

The Kansas State Normal School

In Kansas, the Kansas State Normal School was first established in 1863 as the state's first school for training teachers (with the initial graduating class receiving degrees in 1865), before its name was changed to Kansas State Teachers College in 1923, Emporia Kansas State College in 1974, and finally—as it is known now—Emporia State University in 1977.

Old Training School, 1905-1948. Elementary and high school students attended the Training School, where students studying to be teachers had the opportunity to work with them and the experienced teachers at the school. This building was razed in 1948 to make room for the William Allen White Library.



Norton Science Hall, 1905-1968. This building was located along Twelfth Avenue just south of the current Roosevelt Hall, and was named after Henry B. Norton, first teacher of natural sciences at KSN.

What Goes Around, Comes Around: What Is Good Teaching?

Throughout most of post-Renaissance history, teachers were most often male scholars or clergymen who were the elite literates who had no formal training in "how" to teach the content in which they were most well-versed. Many accepted the tenet that "teachers were *born*, not *made*." It was not until "pedagogy," the "art and science of teaching," attained a theoretical respectability that the training of educated individuals in the science of teaching was considered important.

While scholars of other natural and social sciences still debate the scholarship behind the "science" of teaching, even those who accept pedagogy as a science admit that there is reason to support one theory that people can be "born" with the predisposition to be a good teacher.

Even today, while teacher education programs are held accountable by accreditors for "what" they teach teachers, the "dispositions of teaching" are widely debated, yet considered essential to assess the suitability of a teacher candidate to the complexities of the profession. Since the nineteenth century, however, pedagogy has attempted to define the minimal characteristics needed to qualify a person as a teacher. These have remained fairly constant as the bases for educator preparation programs across the country: knowledge of subject matter, knowledge of teaching methods, and practical experience in applying both are still the norm. The establishment of the "norms" of pedagogy and curriculum, hence the original name of "normal school" for teacher training institutions, recognized the social benefit and moral value of ensuring a quality education for all.

As with so many innovations and trends that swept the post-industrial world in the twentieth century, education, too, has experienced many changes. The names of the great educational theorists and reformers of the **Progressive Era** in education are known to all who know even a little about teaching and learning: Jean Piaget, Benjamin Bloom, Maria Montessori, Horace Mann, and John Dewey to name only a few.

As early as the 1800s, visionary teachers explored teaching people with disabilities. Thomas Galludet developed a method to educate the deaf and hearing impaired. He opened the Hartford School for the Deaf in Connecticut in 1817. Dr. Samuel Howe focused on teaching the visually impaired, creating books with large, raised letters to assist people with sight impairments to "read" with their fingers. Howe led the Perkins Institute, a school for the blind, in Boston. Such schools were usually boarding schools for students with disabilities. There are still residential schools such as the Kansas School for the Deaf in Olathe, KS, as well as St. Mary's School for the Deaf in Buffalo, NY, but as pedagogy for all children moved into the twentieth century, inclusive practice where children with disabilities were educated in classrooms with non-disabled peers yielded excellent results. This is the predominant pedagogy taught by faculty today.

As the reform movements in education throughout the twentieth century introduced ideas of equality, child-centered learning, assessment of learner achievement as a measure of good teaching, and other revolutionary ideas such as inquiry-based practice, educating the whole person, and assuring educational opportunities for all persons, so did the greater emphasis on preparing teachers to serve the children of the public, not just those of the elite.

This abridged version of events that affected teacher education throughout the twentieth century mirrors the incredible history of the country from WWI's post-industrial explosion to the turbulent 1960s, when the civil rights movement and the women's rights movement dominated the political scene and schools became the proving ground for integration and Title IX enforcement of equality of opportunity. Segregation in schools went to the Supreme Court in 1954 with ***Brown vs. Board of Education of Topeka***. Following this monumental decision, schools began the slow process of desegregating schools, a process that, sadly, is still not yet achieved.

(From left) Lawyers George E.C. Hayes, Thurgood Marshall, and James M. Nabrit, Jr., celebrating outside the U.S. Supreme Court, Washington, D.C., after the Court ruled in Brown v. Board of Education that racial segregation in public schools was unconstitutional, May 17, 1954.

In the second half of the twentieth century, the Sputnik generation's worship of science gave rise to similarities in terminology between the preparation of teachers and the preparation of doctors. "Lab schools" and quantitative research using experimental and quasi-experimental

designs to test reading and math programs and other curricular innovations were reminiscent of the experimental designs used in medical research. Student teaching was considered an "internship," akin to the stages of practice doctors followed. Such terminology and parallels to medicine, however, fell out of vogue with a general disenchantment with science and positivism in the latter decades of the twentieth century. Interestingly, these parallels have resurfaced today as we refer to our model of educating teachers in "clinically rich settings." We have even returned to "residency" programs, where teacher candidates are prepared entirely in the schools where they will eventually teach.

As schools became more and more essential to the post-industrial economy and the promotion of human rights for all, teaching became more and more regulated. By the end of the twentieth century, licensing requirements had stiffened considerably in public education, and salary and advancement often depended on the earning of advanced degrees and professional development in school-based settings. Even today, all programs in colleges and universities that prepare teachers must follow extensive and detailed guidelines established by the New York State Education Department that determine what must be included in such programs. Additions such as teaching to students with disabilities and teaching to English language learners are requirements that reflect the changing needs of classrooms.

As the world changed, so did the preparation of teachers. The assimilation of the normal school into colleges and universities marked the evolution of teaching as a profession, a steady recognition over the last 150 years that has allowed the teacher as scientist to explore how teaching and learning work in tandem and to suggest that pedagogy is dynamic and interactive with sociopolitical forces and that schools play a critical role in the democratic promotion of social justice.

Campus Schools and Alternative Classroom Organization

During the '60s and '70s, new concepts of schooling such as multigrade classrooms and open-concept spaces, where students followed their own curiosity through project-based learning, were played out across the nation. At Buffalo State in New York, the Campus School shared many of the college's resources and served as the clinical site for the preparation of teachers. School administration and teachers held joint appointments at the college and in the lab. Classrooms were visible through one-way glass, where teacher candidates could observe and review what they saw with the lab school teacher afterward. Participation in these classrooms was a requirement during the junior year.

Standards and Norms

In the 1980s, education in America once again turned to "norming," but now the norms were not measuring one child against others; rather, each child was assessed as he or she approached the "national standards" that theoretically defined the knowledge and skills necessary for all to achieve.

Fearing America's loss of stature as the technologically superior leader of the free world, ***A Nation at Risk***, published in 1983, cast a dark shadow over teaching and schools for many years to come until its premises were largely disrupted. During the time after this report, however, being a teacher was not a popular career choice, and teaching as a profession was called into question.

By 1998, almost every state had defined or implemented academic standards for math and reading. Principals and teachers were judged; students were promoted or retained, and legislation was passed so that high school students would graduate or be denied a diploma based on whether or not they had met the standards, usually as measured by a criterion-referenced test.

The pressure to teach to a standards-based curriculum, to test all students in an effort to ensure equal education for all, led to some famous named policies of presidents and secretaries of education in the later twentieth century. National panels and political pundits returned to the roots of the "normal school" movement, urging colleges of teacher education to acquaint teacher candidates with the national educational standards known as *Goals 2000*. The George H. W. Bush administration kicked off an education summit with the purpose of "righting the ship" since the shock of *A Nation at Risk*. **Standards-based curriculum** became a "teacher proof" system of ensuring that all children—no matter what their socioeconomic privilege—would be taught the same material. This "curriculum first" focus for school planning persisted through the Clinton administration with the ***Elementary and Secondary Education Act*** **(ESEA)**, the George W. Bush administration with ***No Child Left Behind***, and the Obama administration with ***Every Student Succeeds Act*** ***(ESSA)*** and the accompanying federal funding called ***Race to the Top***. Such packaged standards-based curriculum movements once again turned the public eye to a need to conform, achieve, and compete.

For teachers, the most important development from this pressure to teach to the standards was the controversial ***Common Core***, a nationalized set of educational standards that were designed to give all students common experiences within a carefully constructed framework that would transcend race, gender, economics, region, and aptitude. So focused were the materials published on the Common Core that schools began to issue scripted materials to their teachers to ensure the same language was used in every classroom. Teacher autonomy was suppressed, and time for language arts and mathematics began to eclipse the study of science, social studies, art, music.

Now What?

That takes us almost to today's schools, where teachers are still accountable for helping student achieve the Common Core standards or more currently the National Standards. Enter the COVID-19 pandemic. Full stop.

Curriculum, testing, conformity, and standards are out the window. The American parent can now "see into" the classroom and the teacher can likewise "see into" the American home. Two-dimensional, computer-assisted instruction replaced the dynamic interactive classroom where learning is socially constructed and facilitated by teachers who are skilled at classroom management, social-emotional learning, and project-based group work. Teacher candidates must now rely on their status as digital natives to engage and even entertain their students who now come to them as a collective of individuals framed on a computer screen rather than in a classroom of active bodies who engage with each other in myriad ways. Last year's pedagogical challenges involved mastery of the 20-minute attention span, the *teacher as entertainer* added to the *teacher as facilitator*. Many of our teacher candidates learned more about themselves than they did about their students. Yet, predominately, stories of creativity, extraordinary uses of technology, and old-fashioned persistence and ingenuity were the new "norm" for many teachers nation-wide.

There was nothing "normal" about the years of 2020-2021 as the world learned to cope with a silent enemy. There has been no post-war recovery, no post-industrial reforms, no equity of opportunity in schools around the world. But there will be teaching. And there will be learning. And teacher preparation programs will continue to prepare the highest quality practitioners whose bags of tricks grow ever-more flexible, driven by a world where all that is known doubles in just a few days. Pedagogy is still a science. Teaching is a science, but it is also a craft practiced by master craftsmen and women and learned by apprentices.

Students and staff at Holton High School in Kansas were required to wear masks during the 2020-21 school year. Image by Evert Nelson/The Capital-Journal

Ultimately, however, as even the earliest teacher educators knew, the *art* of teaching is that ephemeral quality that we cannot teach, but which we know when we see it at work, that makes the great teacher excel far beyond the competent teacher.

Teaching has been called the noblest profession. From our profession's earliest roots Normal Schools to the current challenges of post-COVID America, we have never changed our dedication to that conviction. We are still doing what the words of Nobel laureate Malala Yousafzai encourage us to do: "One child, one teacher, one book, one pen can change the world."

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Note:

This chapter was reprinted with permission from the author, using minor adjustments and additions, from a piece originally contributed as part of a guest author series observing the 150th anniversary celebration of Buffalo State College from https://suny.buffalostate.edu/news/1871-2021-short-history-education-united-states.

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Standards-Based Reform Movements

A Brief History

Amanda Lickteig

Standards | NCLB | United States | A Nation at Risk | President Bush | President Reagan | President Obama

The standards-based educational reform movement began in the 1980s with the publication of the landmark report *A Nation at Risk: The Imperative for Educational Reform* in 1983. The report was a culmination of "fears and criticism of the American educational system" following the launch of the Soviet satellite Sputnik and the College Board's 1975 release of declining SAT scores in the nation (Kenna, 2018, p. 28). After the report was released, President George H.W. Bush met with 49 out of 50 state governors during the nation's first National Education Summit in 1989. This meeting, co-hosted by Bill Clinton (then Arkansas governor and the National Governors Association chair), argued for measurable education goals and accountability. It is unsurprising, then, that President Clinton reauthorized President Lyndon Johnson's 1965 *Elementary and Secondary Education Act* (ESEA) by enacting the *Improving America's Schools Act* in 1994. Under this act, states were required to establish standards for every subject and grade level. However, on January 8, 2002, President George W. Bush signed into law *No Child Left Behind* (NCLB), which was an update of the ESEA that held schools accountable for student outcomes.

> *The NCLB law—which grew out of concern that the American education system was no longer internationally competitive—significantly increased the federal role in holding schools responsible for the academic progress of all students. And it put a special focus on ensuring that states and schools boost the performance of certain groups of students, such as English-language learners, students in special education, and poor and minority children, whose achievement, on average, trails their peers. States did not have to comply with the new requirements, but if they didn't, they risked losing federal Title I money. (Klein, 2015, para. 5).*

Figure 1

Signing of NCLB

President George W. Bush signs the No Child Left Behind Act at Hamilton High School in Hamilton, Ohio, on Jan. 8, 2002. The NCLB law updated the Elementary and Secondary Education Act and significantly ratcheted up the federal role in education.
-Ron Edmonds/AP-File

Under NCLB, states were required to test their students in math and reading in grades 3 through 8 and then once in high school, bring all students up to "proficient level" by the 2013-2014 school year, meet "adequate yearly progress" (AYP), and ensure that their teachers were "highly qualified" (meaning they had a bachelor's degree in the subject matter they were teaching and state certification). As Kenna & Russell (2018) summarize,

> *In 2007, NCLB was up for reauthorization by Congress, who failed to rewrite it. This lack of reauthorization; however, did not exempt states from meeting the goal of having all students at a 100 percent proficiency level in reading and mathematics by 2014 (what many critics deemed the toughest part of NCLB). In the 2008 presidential campaign, Barack Obama promised to release states from the 2002 law. On February 17, 2009, shortly after Obama became president, he signed into law the American Recovery and Reinvestment Act of 2009 (ARRA). The ARRA would lead to what is referred to as Obama's Race to the Top (RTTT) initiative [….] Race to the Top sought to provide $4.35 billion to states but the funds would be awarded through a competitive grant program. States then competed with each other to showcase their acceptance of and ability to meet certain educational reforms, such as adopting new college and career standards and utilizing student test data within the teacher evaluation process. (p. 36)*

In the fall of 2011, two years into his first term, President Barack Obama began issuing waivers to states, which offered states not reaching the achievement targets flexibility from key NCLB mandates in exchange for implementing redesign priorities (such as setting standards to prepare their students for higher education and the workforce). And on

December 10, 2015, President Obama signed into law the new *Every Student Succeeds Act* to replace NCLB. Under this new law, states were still required to submit accountability plans, but they could pick their own goals (graduation rates, testing proficiency, etc.). In addition to other requirements regarding school interventions, testing, and accountability systems, states were required to adopt "challenging" academic standards—which could be the Common Core State Standards but did not have to be.

Figure 2

Signing of ESSA.

President Obama signs the Every Student Succeeds Act on December 10, 2015.
-Chip Somodevilla, Getty Images

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SECTION 2

The Art and Science of Teaching

In Aristotle's *Nichomachean Ethics*, we see that he forms distinctions on the mental states of epistemé, techné, and phronesis. Educators who want to help their students flourish, must first have a firm grasp on what they are teaching. Translated scientific knowledge, **epistemé** combines knowledge of a teacher's discipline with educational theory. Commonly considered content knowledge, it is important for educators to have a solid understanding of the 'what' that they are teaching. However, it is also important that teachers have pedagogical knowledge—knowledge about the practices and processes of teaching. Aristotle calls this state of mind **techné**, and it is translated as craft or craft knowledge. Techné is the 'how' of teaching; it is comprised of the skills and techniques of good teaching, what we consider as best practices, and deals with "the most effective means to reach the goal" (Birmingham, 2004, p. 314). At the pinnacle of teaching as a moral activity is the state of **phronesis**, which translates as practical intelligence, practical wisdom, or prudence. Aristotle considered phronesis as an essential habit of mind and a virtue that involves individuals doing he right thing in the right place at the right time and in the right way. Demonstrating phronesis goes beyond possessing general knowledge—it is to exhibit judgment about what is an appropriate response in the particular context —and it often requires educators to reflect-in-action (Schön, 1983).

Those who have spent time in front of a group of students in a classroom know that good teaching is more than just knowing your content (epistemé) or even posessing a strong understanding of best teaching practices (techné). While knowledge of their content area provides educators with a strong foundation, and there is great wisdom in understanding methods and techniques, teaching is an intricate act that requires educators to employ sound decision making based on their knowledge of numerous internal and external factors impacting a situation.

Those who have spent time in front of a group of student in a classroom know that good teaching is an art, just as much as a science.

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Types of Planning
Small-Group and Cooperative Learning

Differentiated Instruction
Interdisciplinary Instruction
Assessment

Types of Planning

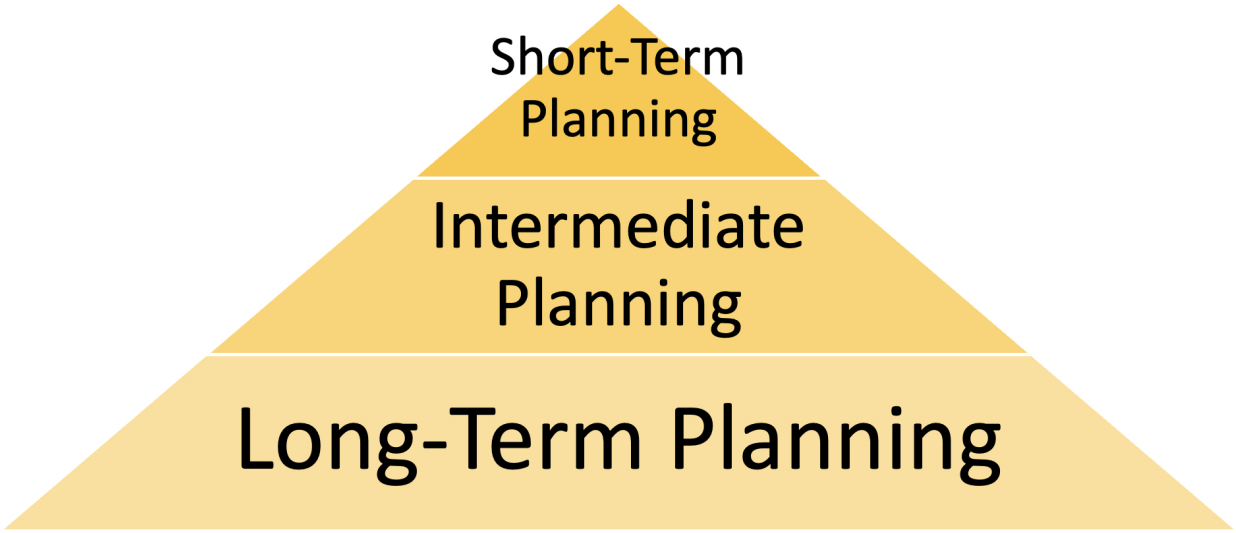
Amanda Lickteig

Planning is one of the most important time investments for a teacher and although many pre-service and novice teachers have some anxiety about getting in front of a class full of students, effective teachers recognize that thoughtful planning can make the difference between a successful or unsuccessful lesson (Savage, Savage, & Armstrong, 2012). Although the necessity of conscientious planning is frequently overlooked because the general public does not observe the amount of time and careful decisions an educator invests in lessons prior to starting class, a well-planned lesson can reduce classroom management issues by keeping students on task, progress in a logical flow where concepts build upon one another, prepares teachers to respond to unexpected situations, and provides educators with an increased sense of confidence. To the untrained eye, an outstanding lesson looks effortless because everything goes as expected, but seasoned educators know that a great lesson is accomplished—in part—through deliberate planning.

Instructional planning can be subdivided into three different types: long-term planning, intermediate planning, and short-term planning (see Figure 1). Each planning type has unique considerations and demands. While the core components of each type of planning remain consistent, minutiae can vary based on the requirements of a teacher's school, district, or discipline.

Figure 1

Types of Planning



Long Term Planning

When an educator is initially hired by a school or district, they are typically given a specific teaching assignment—something like, "freshman English," or "eighth grade social studies." While, in cases like these, there is some direction (in the form of a singular grade level), it can be overwhelming for new teachers to know where to begin due to the sheer range of content that can be covered in those classes. This is where long-term planning can be useful.

Long-term planning, also called long range planning, is an overview of an entire academic year (or term, for those teaching one-semester courses). Remaining largely unchanged for decades, a typical school year includes 180 instructional days, not including holidays, which breaks down to about 35-36 weeks over a nine-month academic year (U.S. Department of Education, 2020). Engaging in long-term planning requires educators to consider their scope (the range of content to be taught—which brings up related deliberation about breadth vs. depth) and sequence (the progressive order in which that content is presented) and therefore helps educators review not only what content they will focus on and in what order, but also considerations such as budgeting for an upcoming order of supplies and ensuring the proper working order of equipment, to name a few. If possible, teachers should start the long-term planning process as soon as they know their teaching assignment (many veteran teachers even spend time over the summer months planning for the upcoming year). So, how do you begin?

District Calendar

One of the first resources you should draw from when beginning long-term planning is the district's academic calendar. Academic calendars, which are voted on each year by the local school board, contain essential information about holidays and breaks, grading periods, student conferences, and perhaps even the schedule of required testing—which can vary based on subject and grade level (Kansas State Department of Education, 2023a). By starting your planning with this calendar in mind, you can immediately cross-off non-instructional days, block off days dedicated to high-stakes assessments, and note unique situations that may impact the length of class or the school's schedule (such regular assemblies, home sporting events, etc.).

Standards

Another great resource for starting long-term planning are national and state **standards**, which were briefly addressed previously in this book. Standards serve as guideposts for planning and educators can use them to know what the outcomes of a course of study should be; standards should inform instruction According to the U.S. Department of Education (2019),

> *Raising academic standards for all students and measuring student achievement to hold schools accountable for educational progress are central strategies for promoting educational excellence and equity in our Nation's schools. The Elementary and Secondary Education Act (ESEA) supports State efforts to establish challenging standards, develop aligned assessments, and build accountability systems for districts and schools that are based on educational results. In particular, ESEA includes explicit requirements to ensure that students served by Title I are given the same opportunity to achieve to high standards and are held to the same high expectations as all other students in each State. (para. 1)*

While voluntary national standards exist in many of the disciplines, the U.S. Department of Education does not determine state education standards; rather, that responsibility is handled by the various states and districts as well as public and private organizations. This link can be used to quickly access each state's individual standards. In Kansas, the Kansas State Department of Education (KSDE) separates standards by *academic* (assessed) and *model* (non-assessed).

Reflections from Interns

Q: What role do standards play in your classroom?

A: The standards that the state of Kansas provides for social studies education are

fantastic in my opinion because they allow the teacher to have a lot of freedom in how they teach. Kansas provides social studies with four standards that we can fit our lessons into. These standards are important in order to ensure that all students across the state are receiving a similar education while also giving teachers the freedom to adapt the material to their students and their unique needs.

-Ms. Rebecca Hertog, pre-service social studies teacher

Curriculum Materials

In some areas, districts may have pre-established **curriculum guides**, which are often the result of teachers and curriculum experts collaborating grade- and/or subject-based outlines to provide educators with vetted resources or detailed scope-and-sequence outlines. While the content and specificity of the information within may vary from district-to-district, some districts (such as a Topeka Public Schools, USD 501) publish their curriculum guides online—which can be useful for novice teachers looking for ideas on where to start because "they provide a framework that can be followed and often offer good suggestions for teaching" (Savage, Savage, & Armstrong, 2012, p. 150).

Additionally, outside resources can also be a great way for new teachers to get a sense of the subject. By skimming a textbook, those new to the classroom—or even those moving to teach a new grade level—can quickly see an overview of commonly addressed subject matter and ideas for suggested unit breakdowns. By diving deeper into the pages, teachers can typically find suggested teaching procedures and student activities, organized units with connections to standards and essential questions, and connections to external content such as related videos, simulations, articles, and more. However, textbooks are not without their weaknesses. Because textbooks can be so costly to adopt, districts often wait a decade or more to update them—and then the information shared with students is outdated or irrelevant. Additionally, textbooks cannot take into account individual students' backgrounds year-to-year and therefore are not tailored to unique interests or activities of the individuals in the class. Textbooks are also notorious for having a reading level that is too high for the audience and for filling the pages with collections of facts and figures—which often fail to encourage higher-level thinking or problem-solving approaches. This causes frustration and boredom among the students. So, while textbooks can be a valuable aide for novice educators, you should avoid using them as the sole source of information in a class. They are just one tool in a teacher's vast repertoire of resources.

Another valuable resource is your network of fellow educators. Content-area colleagues, department chairs, librarians, and instructional coaches are all individuals who you can call upon (really at any point in your teaching journey) to gain insight into what to teach and when. We recommended earlier in this chapter to start as soon as possible in the planning process—and you can't get any earlier than your teacher preparation program. During your field experiences and practicums, request copies of assignments, plans, and activities from your mentor teacher and save those to begin to develop your own personal library of instructional resources.

Implementation

Completed long-term plans take the form of documents that are prepared before the beginning of the year or term. While not synonymous with curriculum mapping (which tends to have more detail takes into consideration vertical and horizonal alignment), long-term plans to have the sense of a "map" because of the direction they provide teachers once completed.

As we've previously addressed, finished products vary in form and format depending on the district, but one easy way to begin is simply to print blank calendar pages and use a pencil to broadly note basic unit topics. That's it—really. While the vaguest, this method allows teachers to quickly sketch out an idea of what units they will cover and when. Because there is not a lot of detail provided within, it is quick to erase and rearrange topics as needed.

For individuals wanting a little more detail, developing a graphic organizer with dedicated spaces for standards, essential questions, key assessments, unit titles, and interdisciplinary connections can be an effective strategy. Whether crafted in GoogleDocs or Microsoft Word, these can be edited, saved, shared, and distributed easily. In fact, in larger schools or districts where multiple teachers are assigned the same classes, it can be extremely beneficial to collaborate in planning.

There are also a plethora of technology-based options for teachers to utilize in long-term planning. Slides Mania is a site with hundreds of templates that teachers can customize through Microsoft PowerPoint or Google Slides (or save them as a PDF and use them with tools like GoodNotes or Notability). This undated digital planner (see Figure 2) can be reused year after year and can be a helpful way to digitally organize and save long-term plans—as well as share them with colleagues, administrators, and even parents.

Figure 2

Undated Digital Planner from SlidesMania

Intermediate Planning

Planning that focuses in depth on the major academic divisions (instructional segments called *units*) is termed intermediate planning. While academic units are typically organized into logical, systematic sequences—and there are even free, online resources available for digital planning—some disciplines are likely more linear than others. For example, it is often necessary for students in mathematics classes to master prerequisite skills before moving on, and social studies classes tend to follow a more chronological timeline of events. However, other disciplines, such as a language arts classroom, often have a little more flexibility in how they structure the organization of their units. Additionally, planning may be influenced by available resources in your school. One example could be if a school only

had one set of heart rate monitors to use between three physical education classes or if there were only a class set of microscopes to use among all science courses. In these cases, teachers will need to coordinate with their colleagues, which is sometimes easier at the middle grades due to their organization of a "teams" approach versus the content-area silos that can often occur in high schools.

Backward Design

Utilizing the backward planning process—also called **backward design**—is an important part in intermediate planning. This process helps ensure that teachers "keep the end in mind" when planning the instructional design for their units. In their 2005 book, *Understanding by Design*, authors Wiggins and McTighe assert that the starting point for planning instruction is to identify the "big ideas" or "enduring understandings" that students should know as a result of studying a specific topic, rather than simply a collection of facts. By doing so, the content and tasks are focused more on what will be transferable knowledge.

Therefore, the first step in Backward Planning is for teachers to identify the desired outcomes or results. After reviewing your disciplinary standards, identify these "big ideas" that students should know, and then put them into the logical, systematic sequence described above. These become the unit's goals. **Goals** are broad statements identifying what students should learn as a consequence of their exposure to the content. These statements provide a general sense of direction and focus regarding the students' learning, but they aren't explicit about day-to-day outcomes. Goals should be focused on students understanding and applying key concepts and generalizations or principles. While goals are not the same as standards, content standards can inform our goals. Another such method of identifying these "enduring understandings" is to craft **essential questions**. McTighe and Wiggins explain that, in a practical sense, we can think of enduring understandings and essential questions as flip sides of the same coin. They write, "our essential questions point toward important transferable ideas that are worth understanding, even as they provide a means for exploring those ideas" (2013). We'll talk more about overarching and topical essential questions soon, but it's important to note that size and scope matter and some questions are more appropriate for units (overarching) while others fit best within specific lessons (topical).

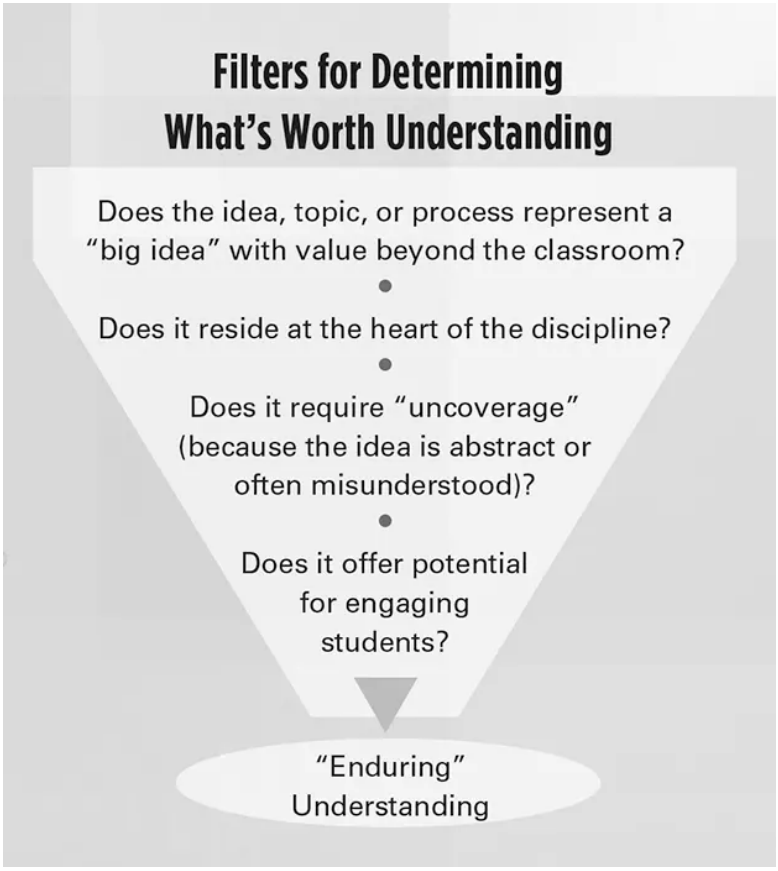
The second step in Backward Design is to identify your acceptable evidence—so, how do you know students "got it"? You should match your assessment tools to your various learning objectives. Teachers should consider a range of assessment approaches and delivery types, including basic assessments like quizzes and tests, but also open-ended prompts that require critical thinking as well as performance tasks and projects. Again, this step should occur *before* designing the specific lessons and instruction.

The final step (but often the step teachers frequently put first) is to select the teaching approaches and various learning activities. This third and final step begins to segue into Short-Term Planning, which we'll discuss in a moment, because it involves providing a progression of experiences in a daily lesson; so, beginning with capturing students' attention, then providing information, moving to a culminating state, and then evaluating students' understanding of material. This progression aligns with the Literacy First format (see next section).

Jay McTighe, one of the original authors, has written a brief synopsis of the three steps more recently in a 2019 post titled, "The Fundamentals of Backward Planning" for ASCD. He writes that there are a multitude of daily challenges, and it can be easy for newer teachers to fall into poor unit and lesson planning habits, but an effective method for helping novice educators avoid these "traps" is this concept of Backward Design. He summarizes the method as "essentially curriculum planning that begins with establishing clear learning goals (with a focus on in-depth understanding) and then works backward to determine how to get students there" (McTighe, 2019, para. 1). His graphic for filtering what is classified as an "enduring understanding" is found below.

Figure 3

Enduring Understanding Filters



Overarching Essential Questions.

What we call **overarching essential questions** are those general questions that can apply to a larger unit of study, although they often make no mention of the *specific* unit's content. Rather, they transcend subject matter and point the students toward more transferable understandings that cut across course topics. These questions meet seven defining characteristics:

1. Is *open-ended;* that is, it typically will not have a single, final, and correct answer.
2. Is*thought-provoking* and *intellectually engaging*, often sparking discussion and debate.
3. Calls for *higher-order thinking*, such as analysis, inference, evaluation, prediction. It cannot be effectively answered by recall alone.
4. Points toward *important, transferable ideas* within (and sometimes across) disciplines.
5. Raises *additional questions* and sparks further inquiry.
6. Requires *support* and *justification*, not just an answer.
7. *Recurs* over time; that is, the question can and should be revisited again and again.

In their chapter, "What Makes a Question Essential?," provide numerous examples of essential questions broken down by discipline. For example, in a social studies course, essential questions could include "Whose 'story' is this?" or "Why do people move?" or "What is worth fighting for?". Essential questions in a mathematics classroom might include "How does *what* we measure influence *how* we measure?" or "When and why should we estimate?". A question in an English/language arts class could be "How do effective writers hook and hold their readers?" while essential questions in the sciences could ask "What makes objects move the way they do?" or "How are structure and function related in living things?". Each of these questions are broad, sweeping inquiries that could cover a whole unit of study with multiple individual lessons feeding into it.

Topical Essential Questions.

The specific questions that fit under the unit's broader (overarching essential question and are usually applicable to a 1-2 day lesson are called **topical essential questions**. It is easy to think of these as "exit slip" questions. For instance, what single question could you pose to students at the end of class where their response would reveal if they understood the main idea behind your lesson? Therefore, in a two-week instructional unit, you would likely have a single overarching essential question, but 8-10 topical essential questions. The table below by Wiggins and McTighe demonstrates how topical essential questions (appropriate for a specific day's lesson) could be nestled within a unit's overarching essential question.

Overarching Essential Questions	Topical Essential Questions
Whose "story" (perspective) is this?	How did Native Alaskans view the "settlement" of their land?
How are structure and function related?	How does the structure of various insects help them to survive?
In what ways does art reflect, as well as shape, culture?	What do ceremonial masks reveal about the Inca culture?
How do authors use story elements to establish mood?	How does John Updike use setting to establish mood?
What makes a system?	How do our various body systems interact?
What are common factors in the rise and fall of powerful nations?	Why did the Soviet Union collapse?

As you can see, the essential questions on the left (overarching) are broader in nature while those on the right (topical) focus on particular topics that fall within their overarching counterpart.

Short Term Planning

The most in-depth type of planning is called **short term planning**, and it often takes the form of lesson plans that cover 1-2 days of content.

Lesson Planning

While a lesson plan can have a variety of different formats, it is essentially a guide for the teacher to know what to teach, how it will be taught, and how learning will be assessed. In short, it is a roadmap of what a teacher needs to cover and how it will be done effectively so students learn what they need to within the scope of a class period. While teachers' lesson plans often become less formal after years of experience, these documents can be a helpful tool in facilitating a smooth delivery and synthesizing curricular. So how thorough should new teachers be in their plans? Authors Savage, Savage, and Armstrong (2012) offer key advice for the novice educator: "As a general rule of thumb, we recommend that beginning teachers should have enough detail in a lesson plan so that it could be picked up and taught by a substitute teacher" (p. 158). By thinking through, *What would someone else need to know in order to teach this successfully in my absence?*, new teachers can identify gaps in their original plan. Simply considering the prompt, "How?", can enable new teachers to elaborate on their sequence of tasks and include details that will add clarity and direction. For example, if a teacher listed "Discussion" in their lesson plan, preemptively adding *how* the discussion will occur can help the teacher consider pacing, engagement, classroom management, and transitions to next tasks. Therefore, "Discussion" could become "For 30 seconds, students think about the prompt and jot down 1-2 sentences on

their notes page. Students then share their ideas with a shoulder partner. After about 1 minute, three pairs of volunteers will share their response with the whole class."

Additionally, a well-detailed lesson plan can become a self-contained document that holds all resources and materials within that are necessary for delivery. For example, by linking any instructional slides, handouts, video clips, etc. directly into the document, the teacher simply needs to pull up the one digital file in future semesters and they would have access to all the pre-developed materials for delivering the lesson. This level of detail has other practical benefits, as well. If a student is planning a prolonged absence (such as medical leave or vacation) and materials aren't yet uploaded to a learning management system, the teacher can quickly locate and send everything to the student in advance. Or if you have a new content colleague and you want to share materials to help them get started, you just need to send a single document and they can view everything.

What are the parts of lesson plan, then? Well, there are numerous different types of lesson plans, and each varies a little on the format (i.e., the 5E Instructional Model, the Direct Instruction Model, the Literacy First Instructional Model, etc.). However, most lesson plans have the same basic elements—they're just found in different places of the document. The list below is not exhaustive, but does outline some typical components located in lesson plans.

- State or National Standards: Descriptions of specific knowledge and skills that every student should know, broken down by discipline, grade levels, and topic.
- Lesson Objectives: Student-centered statements that focus on the daily instructional outcomes.
- Topical Essential Question: Questions that focus on the specific content or topic of that day's lesson.
- Materials: Physical resources, handouts, digital tools, etc. necessary for teachers and students during the lesson.
- Vocabulary: Tier 2 and Tier 3 words that are prominent in the day's lesson (can be new or review)
- Lesson Sequence and Pacing: The order in which the lesson occurs (beginning, middle, and end) as well as the length of each lesson part.
    - Including: Entry point, activities, and wrap-up
- Assessment: Can be formative or summative ways of evaluating if the students understood the concept during the lesson.
- Concepts/Practices: These vary by school, but could include skills outside your discipline that are being emphasized in a lesson, such as WICOR approaches, team-building exercises, digital citizenship competencies, etc.
- Extensions and Support + Accommodations and Modifications: Considerations for how teachers will differentiate a lesson (not only keeping in mind students on IEPs for exceptionalities, 504 plans, second language learners, etc., but also ways to scaffold the lesson if students seem to be struggling in the moment or ways to extend their learning if they "get it" quickly).

While many items in this list are covered in other sections of the text, we'll go into more detail regarding lesson objectives here.

Objectives

Each lesson will have one or two objectives, and these objectives should align with the unit's goals. **Lesson objectives** are specific statements that focus on the daily outcomes of the instruction and they address the question, "What should students be able to do as a result of this lesson?". Objectives identify specific and observable student behavior that serve as an indicator of what the student has learned. Like unit goals, lesson objectives are student-centered and don't refer what to the teacher is doing. Therefore, these narrow purpose statements should focus on what students will learn as a result of a given lesson and therefore frequently begin with the stem, "Students will be able to (SWBAT)…" followed by a specific and measurable verb. While appropriate for writing goals, which are broad and overarching, using verbs such as *understand*, *learn*, or *comprehend* are generally not acceptable for objective writing because they are difficult to measure. However, teachers can glean a host of specific verbs from existing Bloom's Taxonomy verb charts, such as those found here, or here, or here. Additionally, lesson objectives should be skill-based, rather than activity-based—meaning, "what students will be able to do" should be represent a content-area transferrable skill rather than completion of that lesson's activity.

Unit Goals *Applies to an entire unit.*	Lesson Objectives *Applies to a lesson falling within that unit.*
Students will understand how plant cells reproduce.	SWBAT [explain] why plants with flowers need outside help (animals/insects) to reproduce.
Students will understand the relationship between multiplication and addition when solving equations.	SWBAT [solve] equations using both addition and multiplication processes.
Students will learn the differences between connotative and figurative meanings of specific word choices.	SWBAT [locate] connotative and figurative meanings of specific word choices in Whitman's I Hear America Singing.
Students will learn about habits that promote healthy lifestyles.	SWBAT [create] a weekly exercise and nutrition plan.
Students will comprehend causes of the civil war.	SWBAT [list] 2 economic and social differences between the Civil War era north and south.
Students will recognize elements of American Realism art pieces.	SWBAT [identify] examples of American Realism artwork.
Students will distinguish values of musical notes.	SWBAT [translate] a paragraph of *El Alquimista* by Paulo Coelho.

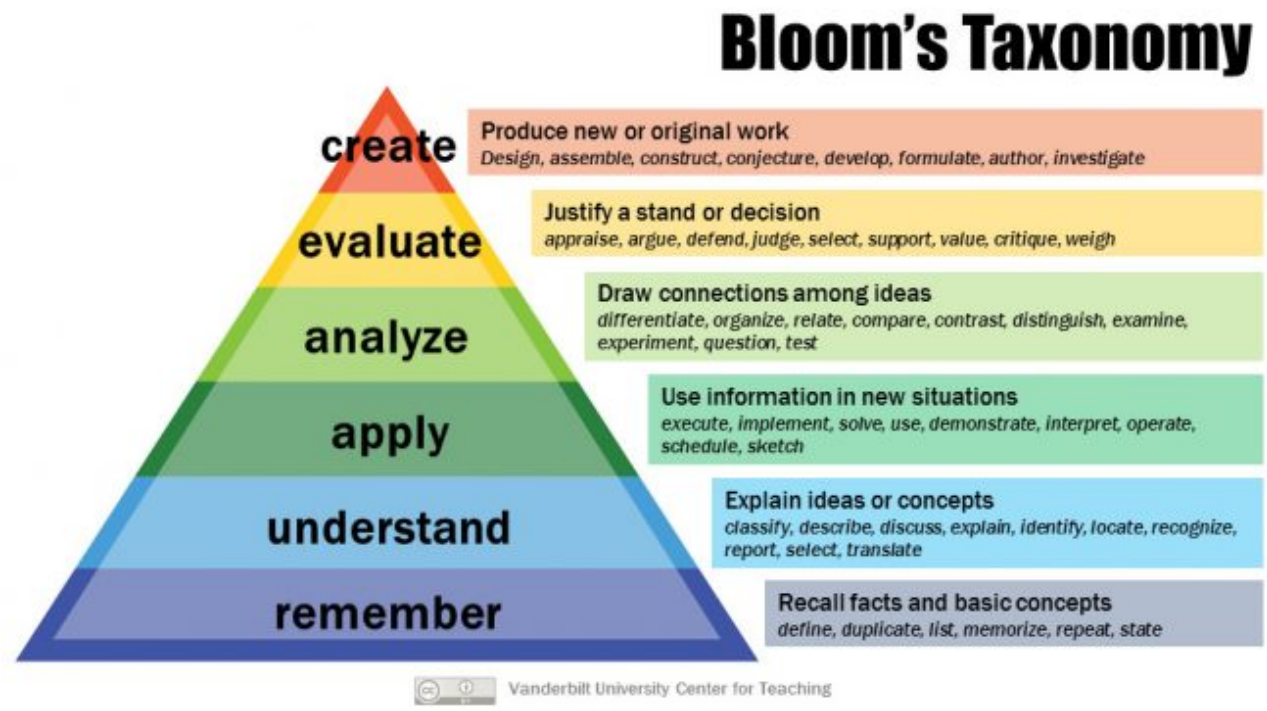
Domains of Instructional Objectives.

Developed in 1956 by educational psychologist Dr. Benjamin Bloom, **Bloom's Taxonomy**, which we just utilized to identify active, observable verbs for lesson objectives, is a system to classify learning objectives by domains, or categories. These three **learning domains** include the cognitive domain, the affective domain, and the psychomotor domain.

The **cognitive domain** is perhaps the most well-known and includes six hierarchical levels of cognitive or intellectual skills that progress from foundational skills to more complex behaviors. Bloom's original taxonomy (with the levels represented as knowledge, comprehension, application, analysis, synthesis, and evaluation) was revised in 2001 by a group of researchers led by Bloom's colleague David Krathwohl and one of Bloom's students Lorin Anderson; while the taxonomy remained with the lower-order skills (LOTS) as the foundation and the higher-order skills (HOTS) at the top, the levels were renamed from nouns to verbs, as you can see below. The diagram below further explains each of the skills, as well as provides verbs that could be used to write objectives for that specific level of cognitive skill.

Figure 4

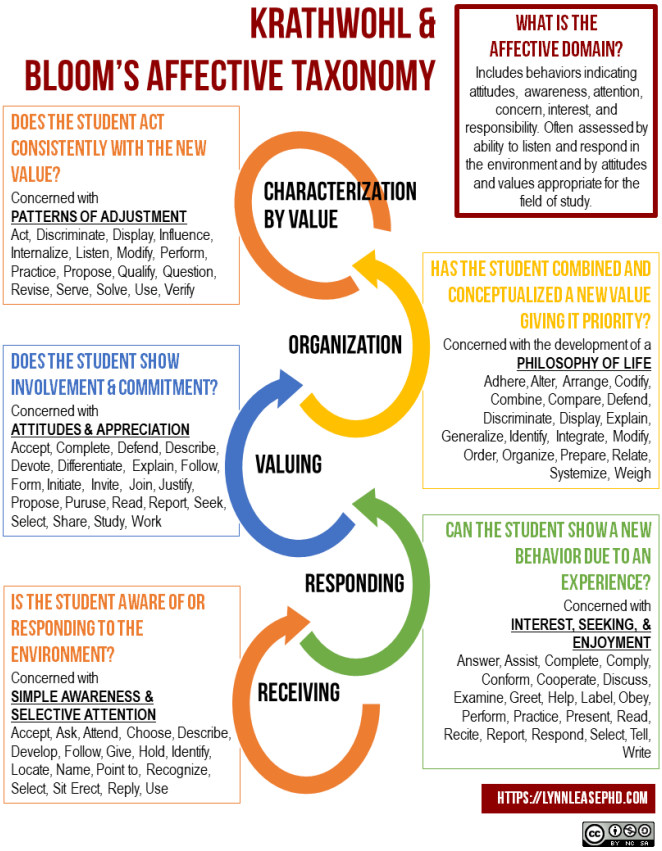
Bloom's Taxonomy Pyramid



The **affective domain** includes learner behaviors relating to attitudes, values, feelings, and emotions. Similar to the cognitive domain, the five areas of the affective taxonomy are listed from lowest-level to highest level.

Figure 5

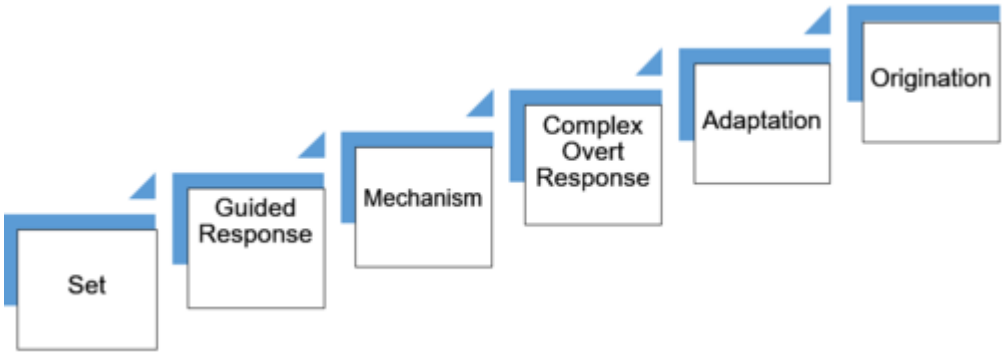
Affective Taxonomy Links



The **psychomotor domain** refers to coordination of the body's muscular system and the learner's ability to use physical skills and movement. While this domain was identified by Dr. Bloom, it was expanded on in the 1970s by educators such as Dr. Elizabeth Simpson, who organized the skills in a simple-to-complex arrangement.

Figure 6

Psychomotor Domain Steps



The University of Waterloo's Centre for Teaching Excellence provides an excellent synthesis of Bloom's Taxonomy learning activities and assessments, which can be found here.

ABCD Objectives.

The **ABCD Method** is a way of structuring instructional objective writing. In this method, there are four distinct components: audience, behavior, condition, and degree. Keep in mind, however, that ABCD objectives are not always written in order. Below, you will see several examples that demonstrate how objectives following the ABCD (audience, behavior, condition, degree) method can be worded.

Students (A) will be able to describe foreign policy differences of the Republican and Democratic presidential candidates (B) on a multiple-choice exam (C) with 85% accuracy (D).

6^{th} graders in Mr. Math's class (A) will be able to correctly solve (B) 8 of 10 problems (D) on a weekly quiz featuring questions about right triangles (C).

During a dissection with their lab partner (C), students in Ms. Frizzle's life science course (A) will be able to identify (B) 4 out of 5 parts of the animal's internal anatomy (D).

Not every school will require teachers to use this structure for objective writing, but they can be helpful for novice teachers to clarify their intended outcomes in a lesson.

Reflections from Interns

Q: Describe the "worst" lesson you have taught. What did you learn from it?

A1: The worst lesson I ever taught was when I was instructing students in an after-school program. It was one of my first days and I was not prepared at all. It was with a younger age group that I had never worked with before and I had the opportunity to research before my lesson time and didn't because I underestimated the work that would need to go into a lesson for first graders. I gave them supplies and it got messy very quickly because I did not give proper instructions before giving students materials.

I learned that in every grade level it is important to be specific with lesson planning. I have learned so much more through my schooling that has allowed me to understand more about the background work that goes into preparing instruction/class work every day.

-Ms. Tabitha Cowley, pre-service English/language arts teacher

A2: The worst lesson I have taught happened not too long ago. I was at an event where I was supposed to be leading a lesson about snow and water. I knew going into it that I was supposed to do some sort of activity where I would show the students the same amount of snow and water in ml. Then, I would melt the snow and they would see that it is not the same amount.

When I got to the event, there was about five minutes when I was figuring out what to do. And this was not enough time, I soon found out. When I started teaching, I felt as though I was stumbling through it and that the students had no idea what I was talking about.

From this, I learned that I personally need more preparation as a teacher. I need to plan out my lessons and to practice the parts where I am not comfortable before I teach it in front of students. I need to do this so that I can give my students the best education that I can. And, I have been doing this.

-Miss Alex Gentry, pre-service dual biology and earth & space science teacher

Conclusion

So, while long-term planning is often required by school or district administrators, the process of long-term planning can be extremely helpful for teachers because the finish product provides direction for the entire academic year. Intermediate planning—or planning that encapsulates a single unit of study—begins to get more detailed and allows teachers to utilize backward design to plan "with the end in mind." Short term plans, then, are the most detailed type of planning and come in the form of 1-2 day lessons. Careful attention to planning can help teachers be successful by being prepared and proactive rather than reactive.

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Small-Group and Cooperative Learning

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Small Group Learning

Small-group learning is a learning method that can supplement direct instruction, simulations, and other class activities and involves the individuals working together in groups of 3 to 6 and helping each other with critical thinking and application of class learnings to real-word scenarios. This approach is often informal and brief and can happen several times in a class session. Small-group learning, when compared to competitive and individualistic learning, improves academic performance, connections with classmates and instructors, and fosters psychological well-being, according to learning science studies (HarvardKennedy, 2023). This helps students to improve their general personality traits including communication, cooperation, teamwork, and public speaking (Sharon, 2003).

Small Group Learning Methods

The phrase "small group learning methods" can be referred to a broad range of inductive and active student-centered instructional strategies that enable students to work in small groups and use effective communication and social skills to cooperate and collaborate with other group members (Cartney & Rouse, 2006). There are different forms of small group learning methods.

Cooperative learning is a methodical, structured and teacher led small group instruction style in which students collaborate in small learning groups to maximize their learning goals and achieve their shared learning objectives (Johnson & Johnson, 1989). On other hand, **collaborative learning** is an unstructured form of small-group learning that incorporates a wide range of formal and informal instructional methods in which students work together in small groups and interact together to achieve a common goal (Springer, Stanne, & Donovan, 1999). Springer, et al. (1999) described the collaborative learning method as “relatively unstructured process in which the learners, talk about the goals, define problems, come up with procedures, resulting in socially constructed knowledge in small groups” (p. 24). Finally, **inquiry-based learning** is a small-group instructional approach to knowledge acquisition starts with essential questioning. Students engage in teams to address a problem or inquiry by exploring, and posing pertinent questions, investigating, making discoveries, sharing the findings with their classmates, and creating a scientific report (Chiappetta, 1997).

Importance of Small Group Learning

There are numerous benefits of incorporating small group learning into your classroom:

- It promotes a deep approach to learning and promotes better academic achievement.
- It develops generic skills.
- It allows students to work in different ways.
- It leads to development of interpersonal skills.
- It increases student motivation.
- It increases active participation in students.
- It increases learners’ confidence level as they are more likely to express themselves in small group.
- There are more opportunites for feedback.

Common Mistakes in Small Group Learning

Although small group learning has been proven to be a highly effective approach of learning, there are common errors that teachers should be mindful of. These errors should be corrected to get maximum results in small group learning. Some of these errors include:

- Having a teacher-centered class when it should be student centered (Edmunds & Brown, 2010).
- Interrupting work and conversation time by asking too many questions rather than letting students drive the dialogue; little attempt to get learners to answer their own questions.
- Having the discussion dominated by a few students.
- Not having a clearly articulated focus for the discussion.
- Having few opportunities for student participation and active engagement.
- Providing an insufficient variety of materials and activities in a class session.
- Supplying poor feedback to students.

History of Small Group Learning

Small group learning has been used for centuries as a means of education and personal development. However, the modern concept of small group learning can be traced back to the late 1800s, with the emergence of the **Progressive Education** movement in the United States. This movement emphasized student-centered learning, collaboration, and critical thinking.

In the early 1900s, the University of Chicago Laboratory School was established as a model for Progressive Education. John Dewey, a philosopher, and educational reformer played a key role in the development of the Laboratory School and the promotion of small group learning.

During the mid-20th century, small group learning gained wider acceptance as a teaching method, particularly in medical education. The concept of problem-based learning, in which small groups of students work together to solve real-world problems, became popular in medical schools.

In the 1960s and 1970s, small group learning was further developed and studied by educational psychologists, who identified its benefits in terms of increased student engagement, motivation, and retention of information. Small group learning was also found to be effective in promoting critical thinking, communication skills, collaboration, and teamwork. Small group learning is a common approach in education at all levels, from elementary school to graduate school. It is used in a variety of fields, including medicine, law, business, and social sciences. Online platforms and videoconferencing have also made it possible to conduct small group learning remotely, further expanding its reach and accessibility.

In middle and elementary school, small group learning has been used for several years but it became more widely accepted as a method of teaching in recent decades. In the early 20^{th} century, the Progressive Education movement focused on small group learning and student- centered teaching making it a center point in the development of elementary and middle school education (Lynch, 2018). **John Dewey** played a great role in the promotion of small group learning in middle and elementary school. He was a philosopher, educational reformer, and a key proposer in the movement of Progressive Education in the late 19^{th} and early 20th centuries. He believed learning should be learner-centered and that students should participate actively in their own learning. He proposed that there should be a connectedness between the learning and the students' interests, doing this would make learning more meaningful and enjoyable. Dewey believed small group learning was a way to achieve these results. He advocated for small group learning to encourage learners to work collaboratively and cooperatively to solve problems. He believed that small groups would give room for students to learn from each other and develop important social skills such as communication, cooperation, and empathy. He viewed small group learning as a way to prepare students for active participation in a democratic society. This movement was pivotal in the development of progressive schools.

In the 1980s and 1990s, small group learning continued to gain popularity in elementary and middle schools, especially using workshop models. This approach involves learners working in small groups to engage in hands-on-activities and explore topics in depth. This workshop model has been used in reading and writing instructions as well as in science and social studies.

In the 21st century, small group learning has continued to be a common practice in elementary and middle schools, especially in subjects such as Mathematics and Language arts. Teachers use small group activities to differentiate instructions enabling learners to work at their own pace and level of understanding. This promotes collaboration and teamwork which are important skills for success in school and in real world scenarios.

Strategies & Methods for Effective Small Group Learning

Small group learning can be very effective in elementary and middle schools if the right strategies and methods are employed (Williams, 2022). Daryl Williams, a middle school educator, shared some tips on effective strategies for small group learning in his video titled Small Groups Can Work in Middle Classrooms.

Watch on YouTube

Some of these strategies include:

- Assigning Roles: Teachers can ensure that everyone participates in the learning processes by assigning different roles to group members. This will ensure that learners take responsibility for their own learning. Some of these roles can include discussion leader, group leader, note-taker, presenter, and timekeeper.
- Providing clear Instructions: It is important for teachers to clearly communicate the goals of the learning activity and provide detailed instructions on what the students need to do. This will help the students stay focused and keep to the task.
- Encouraging collaboration: By giving room for group discussion and peer review, teachers can encourage students to work together in small groups, sharing their ideas and perspectives.
- Encouraging reflection: When teachers provide opportunities for learners to reflect on their learning and share their findings and learnings with their group members, it helps to reinforce their understanding and deepen their learning.
- Using active learning techniques: Techniques such as brainstorming, case studies, problem-based learning and problem-based learning can motivate students to engage actively in the small group learning process.
- Providing resources: For effective small group learning, learners should be provided with resources such as textbooks, articles and online resources to support their learning and expand their horizons and perspectives on the lessons.
- Monitoring Progress: Teachers should monitor the progress of each group and give them feedback to enable them stay on track and address any issues they may face.

Improving Small Group Learning

Small group learning has been proven to be a highly effective method of teaching especially in middle and elementary schools. It is therefore expedient that teachers get better and better at implementing this learning approach effectively. Here are some ways teachers can get better at this approach:

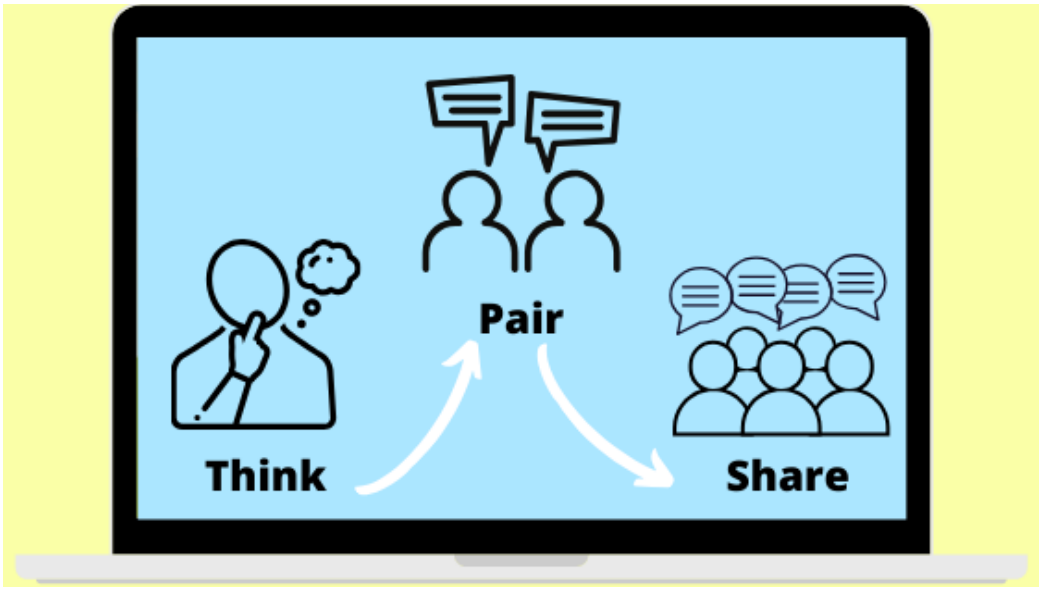
1. Small group time should be used to listen and learn.
    - Instead of teaching right away at the begin of lessons, teachers can take out some time to learn more about the students and what they know. This could be quite challenging as teachers often want to maximize their time and provide direct instructions quickly. However, gathering information about the learners can help teachers improve both their teaching and students' learning (Miller, 2020).
2. Small group should not be an ordering process but rather an offering process.
    - Teachers should not order students to complete tasks in their groups but should offer to collaborate with them to leverage them as agents in their own learning process. Teachers should enable students using effective self-assessment practices and learning techniques to take ownership of their learning process.
3. Always be clear about expectations from teachers and learnersearners.
    - At the start of the small group discussion, teachers should clearly define the expectations and interactions envisaged amongst the learners as well as the teachers. This will help the group to remain focused throughout the learning process.
4. Students should be treated with respect and consideration.
    - Teachers should treat all learners with respect and consideration and should ensure all groups do the same for every group member. Learners should be made to understand that no opinion is valueless, and everyone's idea is well valued.
5. Small groups should have sufficient time and space for expression.
    - Teachers should ensure that learners have enough time and space to gather their thoughts and give contributions to the discussion being shared.

Small Group Learning Activities

There are several small group activities that can be effectively employed from the elementary level all the way up to adult learners. These activities can fun, provide chunking within the lesson, and help to deepen the understanding of the content. Some of these include:

1. Turn-and-Talk: In this activity, the teacher groups learners in groups of twos or threes, and these small groups are required to share responses to the teacher's prompts. The teacher then demands responses from the whole class, calling on different groups.

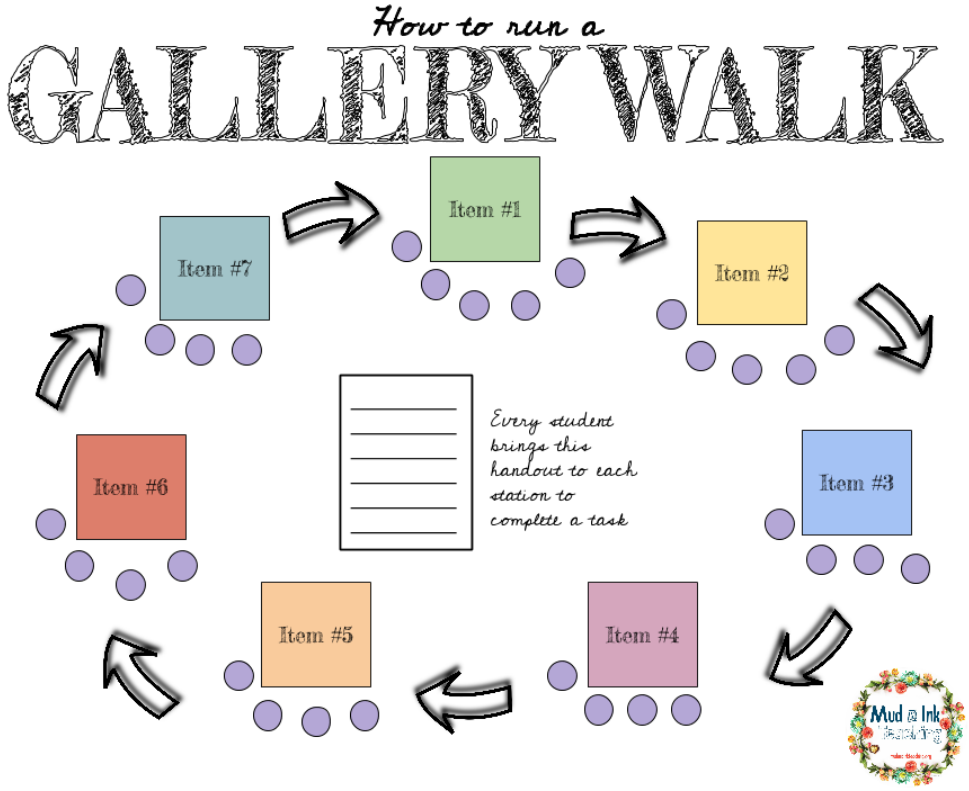
2. Think-Pair-Share: Here, learners write, responding to the teacher's prompt and then share those responses in pairs. The teacher then facilitates report-outs from some pairs.



3. Peer Instruction: Here, the teacher asks a question or requests an opinion on a topic and then creates a poll for the class. Students then discuss their responses in small groups and then the teacher creates another poll.

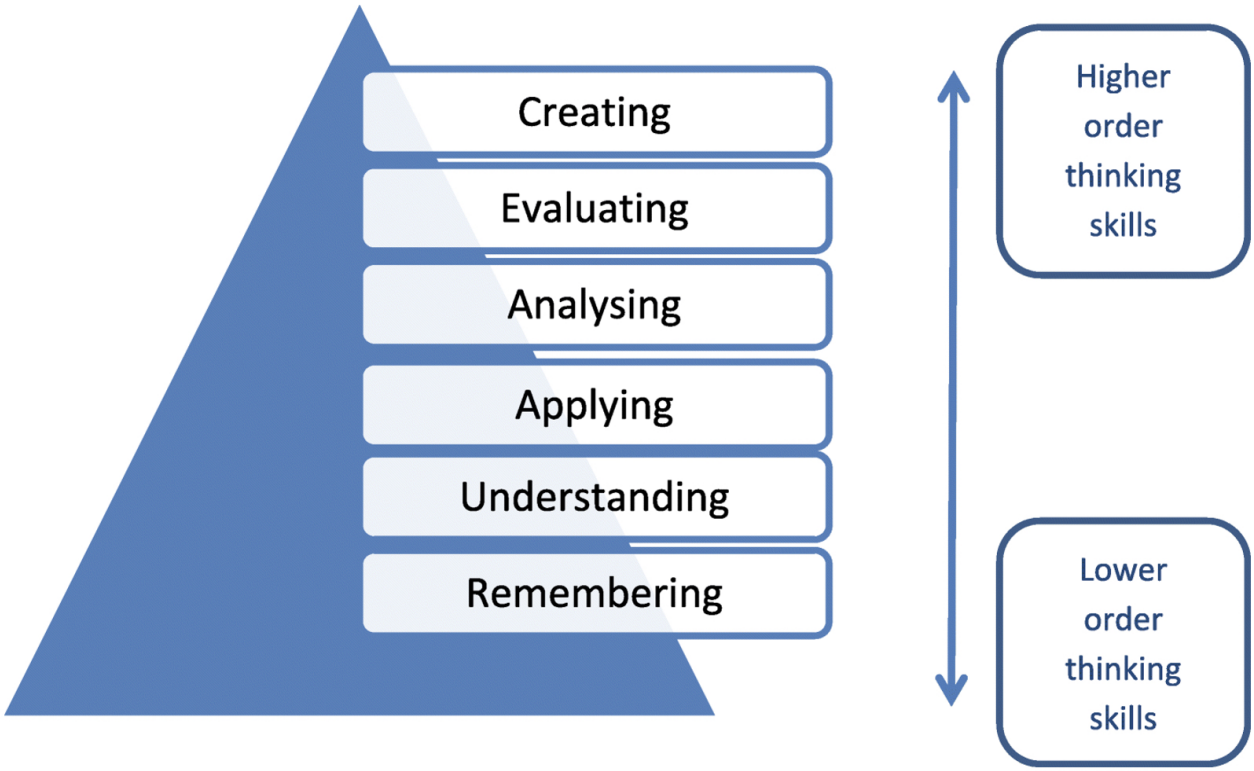
4. Jigsaw: In this activity the teacher divides the class into several small groups, each group working on separate but related tasks. When all members of the group are done with the task, the class is redivided into mixed groups with one member of each of the previous groups in the new group. Each learner in the group teaches the rest of the group what he/she knows, and the group then solves a task that pulls all of the pieces together to form the full picture.
5. Poster and gallery walk: In this activity, learners work on a lesson together in small groups of two-four and present their ideas on a sheet of paper which they display on the wall around the classroom. A member of the group will talk about their ideas and explain to the class while other groups take turs to look at the poster. Each group take turns to look at each other's

posters and can give feedback on what they learn to further their understanding of other topics.



Structuring a Small Group Learning Session

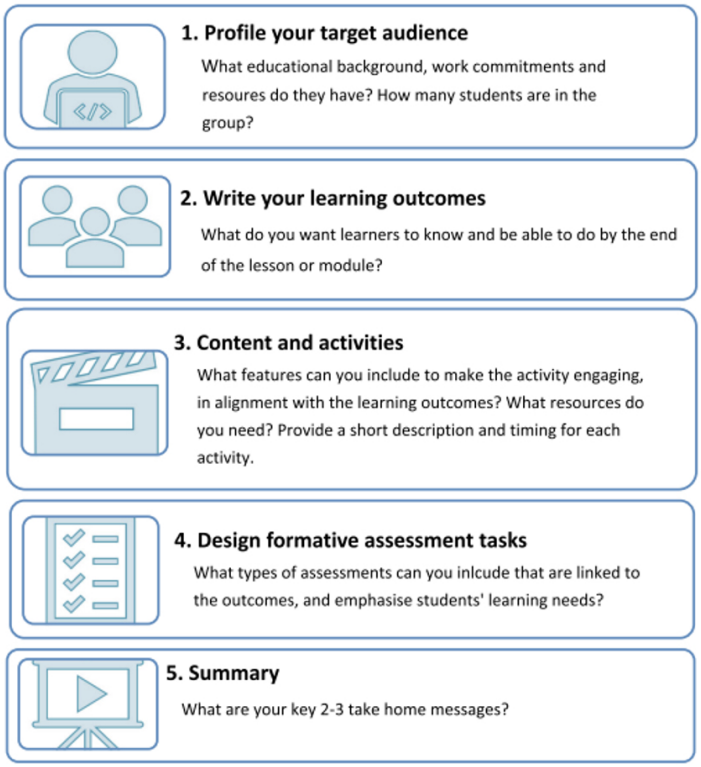
To achieve the desired learning outcomes, curriculum and lesson design must be well planned and coordinated. In small group learning, planning learning activities is an essential component of course design and everyday teaching (Krathwohl, et al., 2001). The purpose of learning activities should be to assist and engage students in achieving predetermined, agreed-upon learning outcomes. The design and execution of small group instruction should be founded on fundamental ideas such the topic introduction, ground rules, role and task maintenance for the group, activity, briefing, debriefing, and feedback (McKimm & Morris, 2009). The flexible nature of this learning approach implies that the lessons must be structured and planned in a way tailored to meet the individual needs of students, focusing on the development of specific skill sets and knowledge. **Bloom's Taxonomy** (mentioned in previous chapters) in below gives a useful structure for designing lesson plans (Krathwohl, et al., 2001). This taxonomy can be used as a tool for detailing objectives of each lesson pan and contains six different categories which are arranged in a hierarchical order for the least to the most complex (Krathwohl, et al., 2001).



Bloom's Taxonomy (Krathwohl, et al., 2001)

The five steps to consider when designing a small group lesson plan are show in the image below. These steps include:

1. Profiling Learners: Teachers should consider the learners that would be participating in the small group learning and know them. Their strengths, skills and learning needs should be taken into consideration. The available resources for the learners should also be taken cognizance of.
2. Defining Outcomes: Teachers should define the envisaged outcomes of each small group learning and details them clearly. These outcomes should be focused and achievable within the available time. Teachers should ask themselves 'What do I want each group and individuals to do, learn and understand at the end of each lesson? It is important to be clear both in the preparation and conveying of these outcomes to learners. It is also a good practice to leave room for students' input in the learning outcome (Diggele, Burgess, & Mellis, 2020)
3. Defining Activities and Strategies: Teachers need to determine the activity and strategy to be used for each small group lesson. Teachers can choose frm the range of small group activities which includes case studies, polls, animations, learning centers an so on. The activities should be defined in such a way that each small group is well organized and have a clear explanation of the learning activities as well as the expectations.
4. Assessment: Teachers should also plan the assessment methods for each small group learning. Formative assessment is important because it reinforces the lessons and skills learned. Feedback should be given to each group as well as individuals on areas they did well and areas for improvement. For effective assessment activity, learners should be given clear outcomes and an indication of how they performed against these outcomes. They should also be given guidance for improvement. Using effective questioning and assessment help students remain active throughout the learning period.
5. Summary: Teachers should give room for a summary of lessons when planning small group work. Feedback should also be received from learners.



Five Key steps to designing your lesson

Best Practices in Small Group Learning

There are several best practices that are pivotal to the success of a small group learning. Some of which include:

- Group students based on their ability, skills/strengths, or interest.
  - By doing this, it is easy for learners to have a common point.
- Coherence and flow.
  - It is a good practice to link small group lessons through activities and tasks.
- Variety.
  - Small group lessons plans should have a range of activities and engaging tasks that are appropriately paced to ensure learners get involved and interested.
- Flexibility.
  - Teachers should be able to modify lessons at any point to keep up with students' interest or to follow up with unexpected questions.
- Use of visual guides.
  - This is particularly important in middle and elementary schools. Charts, posters, or digital slides can be used to display tasks and as reminders. Group members can always look at the guide when stuck. Additionally, using **realia**--or real-life physical objects--as instructional aids have been especially effective at strengthening English language learners' associations between words for common objects and the objects themselves.
- Make small groups as fluid as possible.
  - It is important for teachers to be flexible with their small groups. Teachers should know what the learners need and be prepared to move and change the small groups with time, lesson topics, and learners' needs.
- Keep it moving.
  - Especially in middle school and elementary grades, it is important to keep a balance of instruction, guided practice, discussions, independent practice, and collaboration. To help keep younger students focused and on task, transition between activities every 10-15 minutes and be cognizant of when learners may need to move groups. In instances where one group takes longer on certain tasks, teachers should be prepared with meaningful tasks to keep other groups practicing the skills learned or progressing on to the next task.

In conclusion, engaging in small group learning is an effective way of teaching and has immense benefits for both learners and teachers. This approach enables teachers to meet learners at the stage they are and introduce activities and ideas that would be beneficial for the students making knowledge dissemination faster and more effective, Learners learn the act of teamwork and are able to learn faster and participate actively in the learning process.

Cooperative Learning

Cooperative learning is an instructional approach to learning that involves small group of learners working together on a common task. This could include working on a variety of tasks from simple math problems to larger tasks like proposing solutions to real world problems (Lewis, 2019). This instructional approach to learning involves the grouping of students into **heterogeneous groups** with each group consisting of learners having different skills, abilities, interests, and backgrounds. Each learner takes responsibility for their own learning and is encouraged to support other members of their group to learn. Different strategies can be employed in this learning approach ranging from group discussions, peer teaching, problem solving activities, role playing and more to facilitate collaboration and maximize learning.

When implemented well, cooperative learning can enhance academic achievement, increase student engagement, and improve positive social and interpersonal skills (Chen, 2018). Students who are placed in groups who cooperate well and have positive engagement with each other can solve problems together more effectively (Heleen & Arnold, 2018). This approach reinforces student motivation by giving them more freedom which is a great motivator for their learning achievement by giving them a positive attitude to learn (Chen, 2018).

Cooperative learning happens in structured, formal tasks that are tackled as a group. The tasks and lessons are designed and facilitated by teachers who oversee the progress of the groups. In this learner-centered approach, the teacher serves as facilitator. This approach is advantageous for both teachers and learners as it improves the learners' self-confidence, interactive abilities, and collaborative skills, therefore positively impacting the atmosphere of the classroom. Cooperative learning motivates student to

form wholesome bonds with their classmates. Hence, it is thought that incorporating cooperative learning into the classroom promotes greater student-to-student engagement.

Spencer Kagan, a psychologist and educational researcher, has done considerable work in the development of cooperative learning. He began applying the principles of cooperative learning as a professor at the UC Riverside. He proposed a principle called **PIES** consisting of four elements namely:

1. Positive interdependence: This principle accounts for a direct correlation between the gains of the individual members of the group and the gains of the entire group. In other words, I succeed if you succeed.
2. Individual accountability: This means that each group member is accountable for doing their share of the tasks and learning the material.
3. Equal participation: This component means that each learner gets equal input and responsiblity.
4. Simultaneous interaction: This principle considers that different students interact in different ways during the learning period.

History of Cooperative Learning

Social theorists like Allport, Watson, Shaw, and Mead started developing cooperative learning theory prior to World War II after discovering that group work was more successful and efficient that working alone in quantity, quality, and overall production (Gilles & Adrian, 2003). However, it was in 1937 that researchers May and Doob discovered that those who collaborate and work together to accomplish common goals were more successful in achieving results than those who tried to accomplish the same goals on their own (May & Doob, 1937). They also discovered that independent achievers were more likely to exhibit competitive behaviors (May & Doob, 1937). In the 1930s and 1940s, philosophers and psychologists like **John Dewey**, Kurt Lewin and Morton Deutsh also played their role in influencing the cooperative learning theory practiced today (Sharan, 2010). John Dewey believed it was crucial for students to acquire information and social skills that they could apply in a democratic society as well as outside of the classroom. According to this approach, rather than being passive information consumers, students should be actively engaged in the learning process by debating questions and solutions in groups. He emphasized the importance of social learning and proposed that students learn better when they work together, Kurt Lewin and Morton Deutsch developed theories on group dynamics and intergroup relations which laid a foundation for cooperative learning. Lewin's believed in establishing relationships between group members to achieve learning goals successfully. Deutsh believed in social independence, proposing that each learner has the responsibility of contributing to the knowledge of the group. Researchers started looking at the merits of cooperative learning in the classroom in the 1950s and 1960s. Social psychologist Elliot Aronson's work has a significant impact on this field. Aronson created the jigsaw classroom, a cooperative learning method in which pupils learn in small groups before passing on what they have learned to their classmates. Cooperative learning gained popularity as a successful teaching approach in the 1970s and 1980s. During this time, the work of educational psychologist Robert Slavin was crucial. The "cooperative learning model," created by Slavin, is a paradigm for cooperative learning that consists of five essential components: positive interdependence, individual accountability, face-to-face connection, social skills, and group processing. The cooperative learning theory has seen significant contributions from David and Roger Johnson. In 1975, they found that cooperative learning increased the variety of thinking processes used by group members and fostered mutual like, greater communication, high acceptance, and support. Learners that were more competitive lacked in interpersonal relationships, trust, and emotional investment in their classmates (Johnson & Johnson, Learning together and alone, cooperation, competition and individualization, 1975). They published the 5 elements essential for effective group learning as positive independence, individual accountability, face-to-face interaction, social skills, and processing. These elements would help learners develop social, personal, and cognitive skills. Since then, cooperative learning has been widely employed in classrooms around the world and it has produced immerse benefits including improvement in academics, social skills and an increased motivation to learn.

Types of Cooperative Learning

Some types of cooperative learning include:

- Formal Cooperative Learning:
  - This is a utilized to accomplish group objectives in task work and is structured, supervised, and monitored over time by the teacher (for example, completing a unit). This form of learning can be used to any course topic or task, and groups can range in size from 2 to 6 persons, with conversations lasting anywhere from a few minutes to a whole session. Jigsaw puzzles, projects requiring group problem-solving and decision-making, laboratory or experiment assignments, and peer review work are examples of formal cooperative learning methodologies (for example, editing writing assignments). Informal and basic learning is frequently facilitated by prior experience and skill development with this style of learning (Johnson, Johnson, & Holubec, Advance Cooperative Learning, 1988).
- Informal Cooperative Learning:
  - This approach combines group learning with passive learning by bringing attention to content through small groups throughout the lecture or by discussion at the end of a lesson. Often, groups of two people are involved (e.g. turn-to-your-partner discussions). These groups can fluctuate from lesson to lesson and are frequently transient. A discussion often consists of four parts: forming a response to the educator's questions, discussing responses with a partner, hearing a partner's response to the same issue, and developing a fresh, well-developed response. The student may process, consolidate, and retain more knowledge through this kind of learning (Johnson & Johnson, 1989).
- In group based Cooperative learning:
  - In this approach, learners gather together over a long term to contribute to the knowledge of each group member's mastery on a topic by regularly exploring materials together and supporting the academic and personal achievement of group members. This is effective for learning complex topics and helps to develop supportive peer relationships which motivated the learner's commitment to the group education. This is useful for both individual learning and social support (Johnson, Johnson, & Holubec, Advance Cooperative Learning, 1988).

Differentiated Instruction

Accommodaing Individual Differences

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Differentiated instruction is not a new concept; in relatively recent history, we can see roots of differentiated instruction in one-room schoolhouses, where a single teacher was responsible for the instruction of all different ages of students in a single room. However, when Congress passed the 1975 Individuals with Disabilities Education Act (addressed earlier in this book), educators emphasized differentiated instructional strategies to meet the needs of students with disabilities within the least restrcitive environment. So what does it mean to differentiate instruction? **Differentiated instruction** is an approach to teaching and learning that involves adapting the contents, methods, and methods of assessment to give room for diverse needs, interests, and different learning preferences of individual students. This method of learning prioritizes the different abilities, backgrounds, and experiences of the learners. Furthermore, it recognizes that a one-size-fits-all approach to teaching is ineffective in meeting the needs of all learners. In this method of learning, teachers use a variety of instructional strategies and materials to engage students in meaningful learning experiences that build on their strength while making room for improvement in their weakness and challenges. For instance, teachers may employ adaptable grouping techniques like peer tutoring or small group instruction to give students who need extra support or push those who need it.

Providing students with a variety of opportunities to demonstrate their understanding and learning, such as through written assignments, projects, presentations, or dialogues, is another aspect of differentiated education. Using this method of assessment, students can demonstrate their learning in ways that fit with their talents and passions. This approach to teaching places value of the diversity of learners and aims to create an inclusive and supportive learning environment that allows for all the learners to thrive. Differentiated instruction can allow students with different abilities – from the extraordinarily intelligent students to those with mild or severe disabilities, to receive appropriate education in an all-inclusive classroom (Lawrence-Brown, 2004).

What is a Differentiated Classroom?

In a differentiated classroom, teachers begin the learning process where the learners are and not at the beginning of a curriculum guide (Tomlinson, 1999). They acknowledge and build upon the idea that there are significant differences among learners. As a result, they also agree with and put into practice the idea that teachers must be prepared to engage students in learning through a variety of learning modalities, by appealing to a variety of interests, and by varying the pace and level of instruction. In order to ensure that both the learning environment and content are tailored to the learner, teachers in differentiated classrooms make flexible use of the time allotted to each student, employ a variety of teaching tactics, and collaborate with the students. They don't try to fit students into one certain mold (Tomlinson, 1999). Teachers in differentiated classrooms essentially recognize, embrace, and plan for the fact that students come to school with many things in common but also with the crucial differences that make them unique.

In order to construct classrooms that are suitable for each student, teachers can accommodate this reality in a variety of ways (Tomlinson, 1999).

Figure 1

Pink Floyd's "Another Brick in the Wall" YouTube music video

Accommodaing Individual Differences

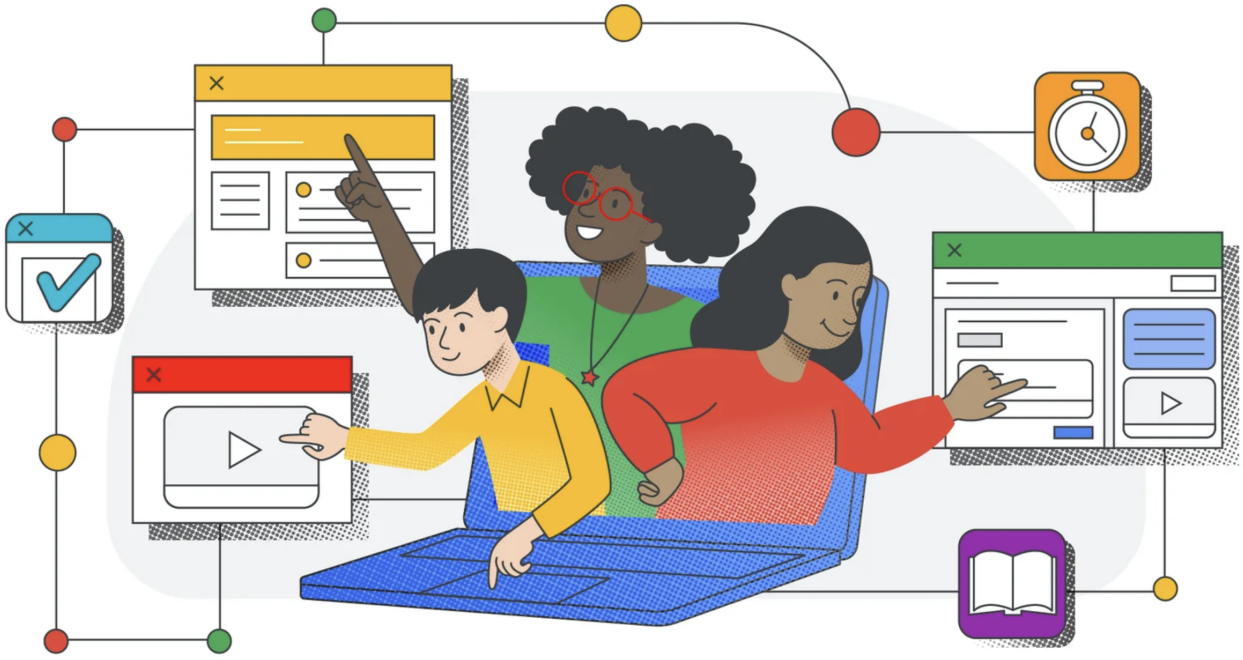
When teachers look to accommodate the individual differneces of learners in their classroom, there are four primary variables that can be altered: rate, content, method, and goals. By using these range of strategies and approaches, teachers can create a supportive learning environment that promotes academic growth and success for all students.

Rate of Learning

One component of instruction that teachers can differentiate involves the **rate**, or pace, of instruction. With this type of individualization, a teacher may choose to chunk the content into smaller segments, in which the students proceed through at their own pace until they demonstrate mastery. This strategy also allows some students to skip topics or concepts that they already understand (which teachers can gather through diagnostic or preassessments--either on paper or through adaptive learning technologies), while allowing others in the class to get more help (i.e., practice, remediation, or tips). This concept dates back to the 1970s with Robert Glaser's Individually Prescribed instruction, which was an approach that paired diagnostic tests with objectives for master. A benefit of technology-assisted adjustments is the element of discrete differentiation; when a task is completed online, it is much more difficult for a student's peers to know what they are working on. This allows the teacher to provide tiered assignments--with different levels of challenge or complexity or degrees of support necessary to meet the learner's needs at various levels--without their peers becoming aware of the scaffolds or extensions being provided.

Figure 2

Google's "practice sets" as a form of adaptive learning.



Content

Another approach teachers may use to differentiate instruction is by altering the content. When **content** is adjusted, educators employ **enduring understandings** and **essential questions** (mentioned in a previous chapter) to have students address the same learning objectives, while actually studying different topics. This can be an effective strategy because students are more intrinsically motivated when they see the relevance of the topics they're studying--and if they are the individuals choosing what they study, then they are more invested in their learning. A **learner's autonomy**--or their ability to take charge over their own learning--helps students become more engaged and connected. Because of this, in part, teachers will also find the quality of work produced by students to be much higher due to empowering students to take charge of their learning.

Method

Changing the method is another tactic teachers might employ for differentiating instruction. If a teacher adjusts the **method** of learning, they are devising ways for students to process information in a variety of formats all the while keeping the learning intentions and content the same. This can involve the teacher varying their instructional approaches (hands-on activities, learning stations/rotations, technology, visual aids, etc.) to deliver the material, but it can also include the teacher providing a range of options for students to accomplish a task (such as recording a video, writing a podcast script, or drawing a diagram).

Goals

When the **goals** of learning are differentiated, a teacher is varying what is taught by involving students in what they want to learn and accommodating their individual characteristics. This approach can be more common in elective courses and as students age. In this form of personalized learning, teachers work with students one-on-one to create personalized learning plans specific to their learning needs and goals. It could involve goal setting, progress tracking, feedback, and support to enable students to reach their full potential. Teachers can then assign students to small

groups (comprised of similar interests, approaches, or skill levels), which can enable peer support during the learning cycle.

Principles Guiding Differentiated Classrooms

True differentiated instruction is a collection of best practices that are thoughtfully combined to enhance students' learning at every opportunity, including equipping them with the skills needed to manage any undifferentiated material. When the standard classroom approach fails to satisfy the needs of the students, educators must employ various tactics for different students in order for them to learn.

Voice & Choice

Some learning approaches simply work better for us than others. If we learn through a variety of ways, then so do the students in our classrooms. Therefore, lesson planning should reflect a variety of ways to offer entry to learning by all students. A simple way to accomplish this is by providing students options in how they receive content (intake) and in they ways they demonstrate understanding. Giving students **choice** allows them an opportunity to find a way that makes sense to them and draws upon their personal skills and interests. When we give students a **voice**, we are giving them the chance to shape or even co-create their own route to learning. Providing students choice in their learning dramatically increases their intrinsic motivation, their depth of engagement in learning, the amount they learned in a fixed time period, and their perceived competence and levels of aspiration. Learning that incorporates student choice provides a pathway for students to fully, genuinely invest themselves in quality work that matters. Participating in learning design allows students to make meaning of content on their own terms.

Choice Boards.

Choice boards (also called learning menus) are forms of differentiated learning that give students a choice in how they learn. Each choice on the board or menu encourages students to engage in an activity centering around important content. Learning menus come in various forms and can include tic-tac-toe boards, restaurant-like menus, matrices, and multiple-choice grids. Learning menus provide teachers multiple options by which to assess student learning. “Appetizers” and “Desserts” can be shared by a group, while “Entrees” could be completed independently. Additionally, “Sides” can serve as formative assessments that teachers and students sample.

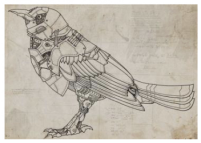
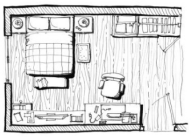
There is considerable flexibility when it comes to how teachers use choice boards with their students. They can require students to work individually, in pairs or small groups, or in a combination of solo and group tasks. They can include stipulations about which components students complete to ensure they get specific content or rigor based on the teacher's design of the board. The tasks within can require students to use physical materials (such as poster paper and markers), be totally digital (such as this Slides Mania menu or this interactive Google board), or be hybrid--a mix of paper (to be handed into a tray) and online (submitted to your Learning Management System, like Google Classroom). They can contain tasks that could be completed within a single class period or hold larger projects that would take numerous classes to complete. They can also be student-paced (when puplils finish one task, they move onto the next) or teacher-driven (the teacher provides breaks in the lesson for students to tackle one of the provided options before returning attention back to whole-group learning). Essentially, there is considerable opportunities to customize the boards to fit standards, lesson outcomes, and student interest and needs.

Figure 3

Digital visual art choice board

Visual Art Choice Board

CLICK THE PHOTOS FOR MORE INSTRUCTIONS. FINISH 1-2 TASKS PER LESSON.

Draw Optical Illusions 	Draw your favourite candy 	Natural objects photo 	3 in 1 Animal Drawing 
Create a SteamPunk animal 	Draw a song lyric 	Hand drawing with patterns 	Draw an alphabet with objects 
Draw your room 	Found object Colour Wheel 	Data drawing 	Magazine collage 

Differentiated Instruction in K-8 Classrooms

Differentiated instruction has been found out to be an effective approach to learning in both elementary and middle schools, too. In middle and elementary schools, teachers design lessons, strategies, activities, and assessments focused on implementing fully differentiated classes. Teachers implement these strategies and have a great success in reaching all level of learners--which has a great impact on the students. When they walk into the classroom, students immediately understand the clearer expectations for learning and are engaged in a variety of activities showing mastery of content and skills necessary to be successful in school and life (Spectrino Pictures, 2017). To achieve differentiated instruction success in middle schools, teachers should be well equipped with resources, professional development opportunities, and adequate preparation time. Maintaining a responsive placement is important for student success in middle schools (Avery, 2017). Children of the same age do not all learn in the same way, just as they do not all have the same sizes, hobbies, personalities, or likes and dislikes. Children share many characteristics with one another since they are all humans and because they are all children, but they also differ significantly. Our commonalities are what define us as humans. Our differences are what make us unique. Only student commonalities appear to be in the spotlight in a classroom where differentiated instruction is either minimal or nonexistent. Commonalities are recognized and emphasized in a differentiated classroom, but student differences also play a significant role in both teaching and learning.

Conclusion

Differentiated instrution is the idea of adapting the curriculum and instruction to the needs and interests of the students rather than requiring the students to adapt to the curriculum. It focuses on “big ideas” and “essential understandings”, considers student differences and interests, groups students by interests and topics, and is based on diagnostic and formative assessments.

Differentiating content includes using various delivery formats such as video, readings, direct instruction, audio, etc. Content may be chunked, shared through graphic organizers, addressed through jigsaw groups, or used to provide different techniques. Students may have opportunities to choose their content focus based on interests.

When it comes down to it, design your lessons in ways that fit the special needs of students and seek to avoid forcing students to endure instructional approaches that are ill-suited to their personal learning styles and interests. Account for different learner preferences by encouraging learner autonomy and incorporating voice and choice, drawing from student interests to inform your instruction, and providing a variety of modes for students to **consume** information and **create** content that demonstrates their learning.

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Interdisciplinary Instruction

Amanda Lickteig

Interdisciplinary and Cross-Curricular Instruction

At the secondary level, you may have heard stories of teachers feeling that they were isolated from their colleagues or that the various disciplines in their buildings are like silos. This happens less frequently at the middle levels where it is more common to adopt a **team approach** versus the departmental approach high schools typically operate within. According to the Association of Middle Level Educators, there are three primary approaches to teaming—core interdisciplinary teams, single subject teams, and exploratory teams. Teaming can help teachers from across a range of content areas work together to respond to shared student needs, integrate curriculum and skills, share effective teaching and learning strategies, and maximize instructional time. But what does it mean to "integrate curriculum and skills" and does it have to be limited only to the middle grades?

In a practice that goes back to the 1930s, the **interdisciplinary approach** to instruction "synthesizes more than one discipline and creates teams of teachers and students that enrich the overall educational experience" (Jones, 2010, p. 1). And while it is of note that teachers have found that planning interdisciplinary units can be challenging, the benefits of an integrated approach as well documented (Duerr, 2008, p. 176). "The Logic of Interdisciplinary Studies," an exhaustive 1997 research report, found broad consensus among researchers as to what the report called the "positive educational outcomes" for students in an integrated-studies program (Edutopia, 2008):

- Increased understanding, retention, and application of general concepts.
- Increased ability to make decisions, think critically and creatively, and synthesize knowledge.
- Promotion of cooperative learning and a better attitude toward oneself as a learner.
- Increased motivation.

Interdisciplinary studies brings together diverse disciplines in a comprehensive manner, enabling students to develop a meaningful understanding of the complex associations and influences within a topic. Effective interdisciplinary instruction requires using both cooperative learning and teaching—two subjects addressed previously in this text.

Cross-curricular instruction is often use synonomously with interdisciplinary instruction. As the Curriculum Leadership Institute in McPherson, KS, explains, "**Cross-curricular instruction** is an instructional strategy that offers a way for teachers to plan lessons that incorporate more than one disciplinary area. This allows students to broaden their lens of understanding and apply skills and strategies they learn in lessons to deepen their overall understanding and make authentic, real-world connections (Strecker, 2021).

Conclusion

Interdisciplinary and cross-curricular instruction help create authentic learning experiences for all ages by breaking down disciplinary walls that commonly separate content areas. They lend themselves easily to **project-based learning** due to their real-world possibilities. When implemended with fidelity, these approaches can positively impact student learning and perception.

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Assessment

BeaAtrice Mazyck

Primary Assessment Types & Purposes

Assessment is used in educational settings for a variety of reasons. The type of assessment used is often linked to the purpose associated with the data collected from the results. How the data is used influences the design of the assessment. Educators use assessments in ways such as keeping track of learning, identifying strengths, diagnosing difficulties, determining eligibility for programs, evaluating programs, evaluating teaching, and reporting to others for accountability. No matter what form of assessment you use, the purpose of assessments is to provide information, data, and feedback for planning and improvement of teaching and learning.

The purpose of this chapter is to provide practitioners with some of the most salient points of academic assessments that should be considered when measuring the content knowledge and skill levels of all students. As you explore six types of assessments, we provide examples of classroom applications along with information to help educators maximize the effectiveness of assessments in the learning environment.

According to the National Council for Teachers of English, the teacher is the most important agent of assessment, because most educational assessment takes place in the classroom, as teachers and students interact with one another (n.d.).

In education, assessment is the center of many debates among all stakeholders. Complex, wide-ranging, and often contentious, the debates usually center on how assessments are used, how often they are being administered, and whether assessments are beneficial or harmful to learners and the teaching process (Lynch, 2022).

Diagnostic Assessments

Diagnostic assessments are given at the beginning of a course or unit to assess current knowledge. This type of assessment is used to help teachers identify what students already know and can do in relation to the content to be studied in the course. Therefore, diagnostic data is used for instructional planning and pacing, helping teachers to find out where students are concerning grade level or content standards.

Examples of diagnostic assessments include screeners, pre-test, and observations. The frequency of these assessments depends on the specific type of assessment and assessment structures.

Formative Assessments

Formative assessments could be thought of as assessments for learning. Taking this approach helps to keep the purpose of these types of assessments in focus. When using formative assessments, the data should be used to inform instructional decisions in real time. Formative assessments serve as pulse checks for measuring student learning and ultimately, the effectiveness of your instruction. If students are struggling, you probably need to reteach. If students are doing well, you can move on and provide continued practice. One critical aspect of formative assessments

is allowing students to interact with the content and develop meaning and connections. Occurring during the learning, formative assessments can be used by both teachers and students to help identify gaps in learning, clarify misconceptions or understandings about the content, or determine if students are ready to move on to the next concept. Formative assessments are a high-leverage strategy for improving student learning outcomes and should occur frequently throughout each lesson. This helps teachers to keep track of learners' progress toward learning objectives and standards.

Some examples of formative assessments include observations, quizzes, classwork, and homework. You can check out this resource for a list of 27 formative assessment strategies that can be used to gather evidence of student learning.

There is much debate among educators on whether or not formative assessments should be graded. However, it is more important to understand the purpose of formative assessments and how important they are to the teaching and learning process.

Summative Assessments

Assessments that take place after the teaching is completed are called **summative assessments**. This form of assessment is used to measure how much learning has taken place at the end of a learning unit and measure student proficiency on that content or skill. The data from this type of assessment provides a summary, with limited impact on student learning. Instead, this data serves as evaluative feedback used for future planning regarding curriculum, instruction, and the implementation of learning strategies.

Summative assessments include unit or term assessments, performance assessments, and standards-based assessments, as well as benchmarks and state assessments.

Summative assessments are always graded or used as a component of accountability measures. This is how teachers can ensure that students have met learning targets and standards.

DISCUSS

Are “standardized tests” a fair way to assess the learning achievement of all learners, given that some learners may be better test-takers than others? Or should learners be given various assessment options and several opportunities to show what they have learned?

High-Stakes Assessments

Assessments that are usually associated with requirements that present some form of benefit or consequence based on the result are called **high-stakes assessments**. The “stakes” are the potential benefit that would be gained from successfully meeting the required score on the assessment. There is a specific assessment with clearly defined standards that measure performance levels specific to the knowledge and skills needed to be successful. For example, to qualify for a Kansas initial teaching license, you must complete a content knowledge assessment in each of the endorsement or teaching subject areas for which you completed a teacher preparation program (Kansas Department of Education, 2023). You must also complete a pedagogy or teaching skills test--the Principles of Learning and Teaching, or PLT, exam. These are considered “high-stakes” assessments because they are financially costly to candidates and have high passing cut-scores, and candidates will not become licensed to teach until they have achieved passing scores. In addition to board certification exams, other examples of high-stakes assessments include licensing assessments for getting a driver's license or CDL and achievement assessments like the SAT, ACT, or GRE. High-stakes testing has also been used in education as measures for grade advancement and graduation. However, there is much

debate around the value and impact of high-stakes testing, particularly in education, as the results of these assessments create and exacerbate barriers for many students. Additionally, there is evidence of the psychological impact on students.

DISCUSS

Is high-stakes testing the right way to improve schools, teaching quality, and learner achievement?

For a quick summary on the differences between the types of assessments discussed above, check out this video resource: Diagnostic vs. Formative vs. Summative Assessment.

Norm-Referenced vs. Criterion-Referenced

When comparing norm vs. criterion-referenced assessments, it is important to note the difference in how scores are interpreted and the purpose for which the data is being collected.

A **norm-referenced assessment** measures and compares student performance to other students. Students with the best performance receive the highest grade. The data from norm-referenced assessment serves two major purposes: 1) See where students rank nationally and, 2) Track students over time. For example, The National Merit Scholarship uses Preliminary SAT/National Merit Scholarship Qualifying Test (PSAT/NMSQT®) results to identify top scorers and to track student progress throughout high school (National Merit Corporation, 2023).

Criterion-reference assessments measure and compare student performance in relation to pre-established standards or learning objectives. All students may receive the highest grade if they meet the established criteria. The traditional assessment where the highest grade possible is 100% is an example of a criterion-referenced assessment. Essentially, the score represents the learner's mastery level towards the standards or content.

While both assessment types can be interpreted in similar ways, they are usually intended to be one or the other.

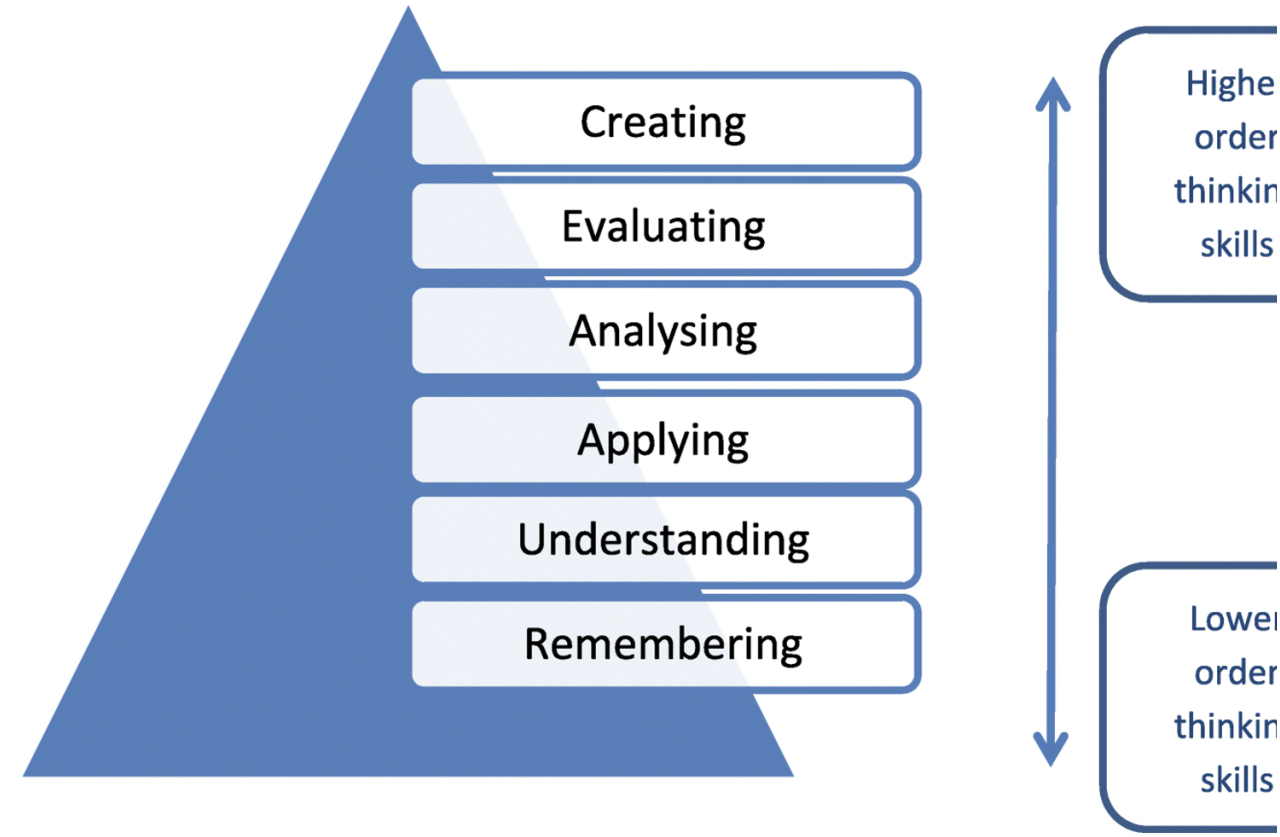
This video may serve as a good resource of examples regarding these two forms of assessment.

DISCUSS

Do standardized assessments reflect intrinsic biases that favor some learners over others, such as wealthier white learners from more-educated households over minority and low-income learners from less-educated households?

Figure 1

Content-Specific Assessment Examples



Reliability vs. Validity

In the realm of assessment development, both reliability and validity are important. **Reliability** refers to the consistency of the measure--can the results be reproduced? However, reliability is only important within the context of validity. **Validity** is the accuracy of the measure--does the assessment measure what it was intended to measure?

As educators, we are responsible for accurately assessing and documenting student growth and achievement as a measure of effectiveness. As accountability measures change and shift to include various metrics, one criterion remains steadfast in teacher evaluations and accountability measures, student achievement.

With classroom assessments and activities at the foundation of learning, all assessments must be both reliable and valid in alignment with state and national academic standards.

Assessment Item Construction

When developing assessments, there are three keys to developing high-quality assessment items: alignment, depth of knowledge, and vocabulary. However, additional assistance in writing effective test questions can be found by visiting this online resource on assessment development and item construction.

Alignment

Alignment with the standards and learning expectations is an essential aspect of assessments. Standards, provided by state or national organizations, establish expectations for learning. To measure outcomes accurately, assessments are used, making alignment the most important aspect of assessment development. One framework by Grant Wiggins and Jay McTighe offers a planning process and structure to guide curriculum, assessment, and instruction. Its two key

ideas are contained in the title: 1) focus on teaching and assessing for understanding and learning transfer, and 2) design curriculum “backward” from those ends (ACSD, 2012). Educators can achieve the concept of **backward design** by engaging in a three-step process when planning and implementing the curriculum.

> *"…backward design is beneficial to instructors because it innately encourages intentionality during the design process. It continually encourages the instructor to establish the purpose of doing something before implementing it into the curriculum. Therefore, backward design is an effective way of providing guidance for instruction and designing lessons, units, and courses." (Bowen, 2017)*

DISCUSS

Have you seen evidence of backward design at any level (PreK-16) and from any perspective (whether you were a student, observer/intern, para, substitute, or instructor the class). If so, what did that look like? If not, what do you think implementing backward design would have changed? Do you think backward design would be evident to all parties, or only to those in an instructional role?

Although covered previously in this text, even more information about Backward Design/Understanding by Design can be found here on Vanerbuilt's Center for Teaching webpage.

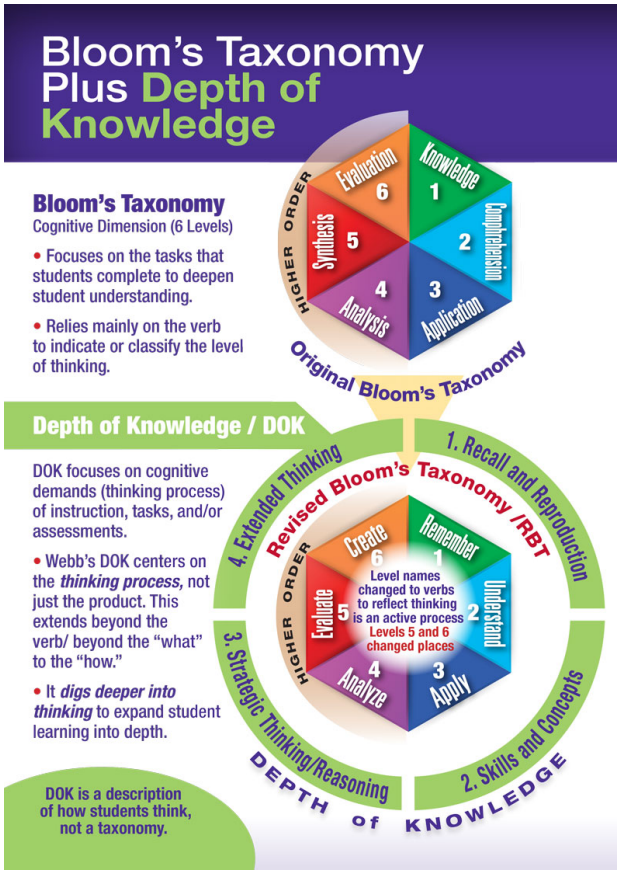
Educators who share an inclusive vision of student learning understand that the purpose of assessment, at all levels, is to inform and guide the instruction of students. This can occur only when the content of student instruction and assessment are aligned.

Depth of Knowledge

Depth of Knowledge (DOK) refers to the language used to establish the level of rigor as it aligns with the complexity of the cognitive demand of an assessment. Often, parallel with Bloom's Taxonomy, Wedd created this framework to provide vocabulary that provides a common language for how learners engage with the content.

Figure 2

Bloom's Taxonomy & Webb's Depth of Knowledge



Vocabulary

When considering how to assess student learning in a course, the ideal assessment would be one that not only assesses students' learning, but also teaches students and improves their skills and understanding of course content. Vocabulary lies at the heart of content learning, as it serves as a proxy for students' understanding of concepts (Fisher & Frey, 2014). When developing instructional plans, learning activities, and assessments, teachers must explicitly teach both general academic vocabulary as well as domain/content-specific vocabulary. Simply put, **academic vocabulary** are words and phrases that are commonly found in academic texts and discourse across all discipliens. **Domain or content-specific vocabulary**, on the other hand, are the terms that are unique to a particular content area and are rarely seen outside of that discipline. It is important that teachers use consistent language (in stating goals, in talking in class, and in writing test questions) to describe expected outcomes and use them consistently so that students know what you mean when you use them; in class and on assessments (Constructing Test, 2023).

Chapter Summary

In this chapter, we discussed different forms of assessments, their purpose, examples, and their impact on learning and the field of education. Understanding the purpose and intended use of an assessment is key to measuring student learning appropriately. It is imperative that formative assessments are used continually throughout instruction and that the information and data are used to guide instructional decisions as students are engaged in the learning process. As students progress in their learning, it is essential to measure what students have learned after a lesson, unit, or course. The alignment between standards and assessments is foundational to the assessment development process and educators should create assessments that are both reliable and valid in alignment with the learning objectives of state and national academic or performance standards. As assessment items are constructed, assessing your assessment for quality and rigor is important.

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SECTION 3

Students as Diverse Learners

When we say **diverse learners**, we're using "an umbrella term used to describe students hailing from a wide variety of backgrounds and experiences. These may be related to race or ethnicity, socioeconomic status, or regional or local cultural differences. It can even refer to a student's home life and/or intellectual capabilities" (Breakout EDU, 2022).

Each student has unique needs, and the chapters within this section highlight some of the students that will be in your future classrooms.

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Multicultural Classrooms

Craig Butler

Most beginning educators think there is a set definition for multicultural education. They are confused when they are told there is no set definition for multiculturalism in education. According to most researchers such as James A. Banks and others, multicultural education should be dynamic or emergent. In other words, multicultural education should evolve to meet different circumstances and will look different in different educational settings. For example, do schools that serve majority dominant cultural students need multicultural education? Do schools that serve majority underrepresented communities of students need multicultural education? The answer is yes, however, multicultural education will look different in both settings. Each educational institution needs multicultural education, but the need of schools are different. Thus, the multicultural education strategies need to fit the educational setting in which they are located.

According to Banks (2019), the goal of multicultural education is to reform educational institutions so that students who come from diverse backgrounds (racial, ethnic, socioeconomic classes, levels of ableness) experience educational equity. A quality multicultural educational program will also champion efforts to create educational equity and opportunities for students who represent different biological sexes (male and female), different genders (a social construct), and students who represent lesbian, gay, bisexual, transgender, queer and or questioning, intersex, asexual, two-spirit).

Another way of looking at **multicultural education** is the definition suggested by Nieto (2012) as cited by Alenuma-Nimoh (2012), "… as a process of comprehensive school reform and basic education for all students. It challenges and rejects racism and other forms of discrimination in schools and society and accepts and affirms the pluralism (ethnic, racial, linguistic, religious, economic, and gender among others) that students, their communities, and leaders represent. Multicultural education permeates the curriculum and instructional practices used in schools, as well as the interactions among teachers, students, and parents and the very way that schools conceptualize teaching and learning" (p.2). Additionally, Alenuma-Nimoh (2012) cites the work of Banks (2008), by suggesting that there are key elements to a quality multicultural educational program. They are content integration, knowledge construction process, equity pedagogy, prejudice reduction, and an empowering school culture and social structure.

Teachers who are interested in allowing all students to reach their full potential socially and academically must first take a critical look at themselves. One of the ways to do this is suggested by Harro (2010). Harro suggests that we are born with a certain set of social identities. These identities include our gender, ethnicity, skin color, first language, age, ability status, religion, sexual orientation, and economic class. According to Harro these social categories predispose us to unequal roles in a system designed on oppression. We are socialized to be different and according to Harro, "This system is pervasive (coming form all sides and sources), consistent (patterned and predictable), circular (self-supporting), self-perpetuating (intra-dependent), and often invisible (unconscious and unnamed). These hegemonic systems play out in our classrooms as well.

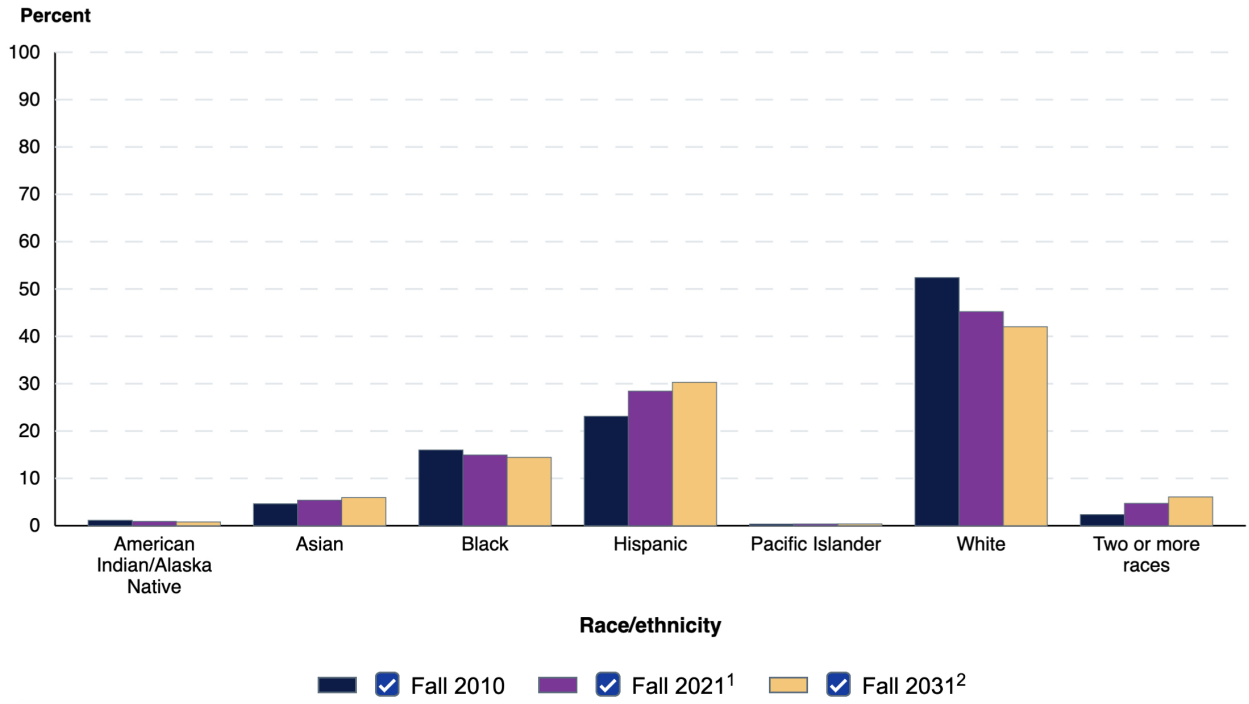
Schools often serve as reproduction systems of the dominant culture's social values, or **cultural hegemony**—"a commonsense view of what is and why things continue to happen that serves the interests of those already privileged in a society" (Banks & Banks, 2010, p. 46). As social institutions, public p-12 schools are not immune to social issues of

the societies and communities in which they are located. Naturally, education is impacted by **social constructs** such as race, ethnicity, gender, and social class. Numerous studies and research have persistently pointed to a racial achievement gap in the U.S. (Pollack, 2012; Sugai, O'Keefe, & Fallon, 2012; Banks & Banks, 2010; Sealy-Ruiz & Green, 2010; Wyatt, 2009; Ladd & Fiske, 2008; Rothstein, 2008). Many such analyses indicate that students of color have lower achievement scores (Pollack, 2012; Sugai et al., 2012), higher disciplinary rates (Canton, 2012; Pollack, 2012; Sugai et al., 2012), higher rates of referral to special education services (Pollack, 2012; Sugai et al., 2012), and higher drop-out rates than White students (Wexler & Pyle, 2012). As a result, socio-economic and racial school-readiness gaps, mainstream-centric curriculum, and inadequately qualified teachers have contributed to the academic and social marginalization of students of color in some U.S. schools. Although the U.S. has experienced a deepening in ethnic culture, "… the U.S. school, college, and university mainstream curriculum is organized around concepts, paradigms, and events that primarily reflect the experiences of mainstream Americans" (Banks & Banks, 2010, p. 233). Banks and Banks (2010) claim that mainstream-centric curriculum marginalizes the experiences of African Americans, Latinos, and Asian Americans.

Public schools in the U.S. are becoming more and more culturally diverse. The culture of schools can help to support or hinder the healthy academic and social development of students of color. Sugai et al. (2012) state in their research that by 2050 students who have historically been considered minorities such as African Americans, Latinos, and Native Americans will actually comprise more than 50 percent of the population (p. 197). In actuality, U.S. Schools are already there. Presently, the number underrepresented students in the U.S. is equal to and in upcoming years will surpass the number of White students in the U.S. However, U.S. Schools still are based on White Eurocentric norms and values. The U.S. teaching population perpetuates these norms as 80% of teachers in the U.S. are White and out of that 80%, 75% of teachers are White females. Thus, "when the espoused values of knowledge and learning are at odds with the lived experiences of racially underrepresented students, students feel isolated and rejected (Thompson, 2004: Tatum, 1997). This holds true for students who come from underrepresented economic levels as well as most schools are designed around middle class social and economic norms.

Figure 1

Percentage distribution of student enrollment in public elementary and secondary schools, by race/ethnicity: Fall 2010, fall 2021, and fall 2031



Rounds to zero

[1] Includes imputations for nonreported prekindergarten enrollment in California and Oregon.

[2] Data for fall 2031 are projected.

NOTE: Data are for the 50 states and the District of Columbia. Projections in this figure were calculated after the onset of the coronavirus pandemic and take into account the expected impacts of the pandemic. Some data have been revised from previously published figures. Race categories exclude persons of Hispanic ethnicity. Detail may not sum to 100 percent because of rounding. Although rounded numbers are displayed, the figures are based on unrounded data.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), "State Nonfiscal Survey of Public Elementary and Secondary Education," 2010–11 and 2021–22; and National Elementary and Secondary Enrollment by Race/Ethnicity Projection Model, through 2031. See *Digest of Education Statistics 2022*, table 203.50.

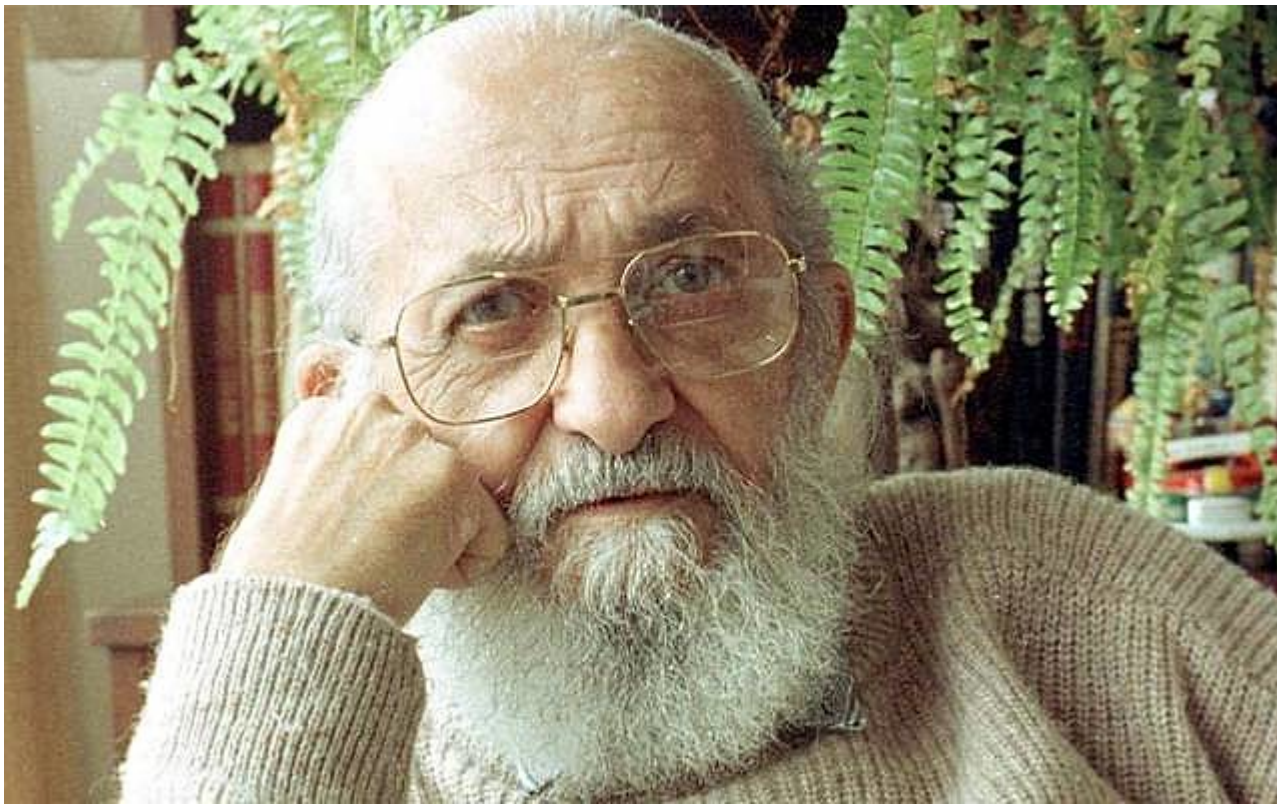
To counter these hegemonic structures teachers, need to embrace and incorporate aspects of **social justice theory** into their classrooms. Teachers who Incorporate social justice initiatives into the classroom believe in equitable distribution of resources and treating all students with equity so that they feel safe mentally and physically. Incorporating social justice measures into the classroom can be challenging, however, according to Navarro, Shah, Valdez, Dover, and Henning (2020) "… there are countless examples of social justice teachers artfully navigating these challenges (e.g., Agarwal et al., 2011; Dover, 2016; Picower, 2012b). Social justice teaching in urban schools merges academic skills, content knowledge, and critical literacy (Camangian, 2010, 2015; Epstein, Mayorga, & Nelson, 2011; Martin & Larnell, 2014); infuses culturally caring classroom practices (Gay, 2000, 2014; Howard, 2002; Ware, 2006); sustains the linguistic, cultural, and dynamic practices of students of Color and other marginalized groups (Brockenbrough, 2014; Ladson-Billings, 2014; Paris & Alim, 2017); and involves social action beyond the schoolhouse (Duncan-Andrade & Morrell, 2008; Picower & Boyle, 2017)", (p.11).

Teachers who incorporate social justice initiatives into their classroom must develop the concept of **conscientizatio**n. This work is based on the work of **Paulo Freire** who defined the term as an…"ongoing activity of engaging in critical

consciousness that involves reflection and action upon the world; it can help individuals “achieve a deepening awareness both of the socio-cultural reality which shapes their lives and of their capacity to transform that reality” (cited by to Navarro, Shah, Valdez, Dover, and Henning, 2020, p. 12).

Figure 3

Paulo Freire



Freire dedicou seus 75 anos de vida à construção de métodos inovadores de educação, com foco na transformação social - Foto: Escola de Gestão Socioeducativa Paulo Freire - RJ

Students who come from underrepresented communities need to, “…be exposed to outstanding, diverse, caring educators who have high expectations for them and believe in their capacity to succeed. They would feel welcomed in their school environments by adults who affirm their cultural identities and recognize the strengths and assets of all students” (King Jr & Forte, 2021, p. 2).

This can be done through the practice of **culturally relevant pedagogy**. However, before we discuss the concept of culturally relevant pedagogy, we must first get a working definition of culture, school culture, and how school culture and home culture can compete against one another.

In basic terms, **culture** is a way of life for diverse groups of society. Culture is passed on from one generation to the next. Banks in his 2006 publication defined culture as aspects of a person such as their race, religion, language, sexual identity, gender, and social class. Yet, intersectionality plays a role in cultural development as well. In other words, race, biological sex, gender expression, and socioeconomic class will intersect to determine characteristics of an individual, the advantages and disadvantages of that individual, and how those individual experiences different societal structures, for example schools. Schools have their own cultures, and these cultures can influence how different students experience schools.

The concept of school culture can be traced back to Waller (1932), who wrote about the sociology of schools and teaching (Meier, 2011; Maslowski, 2006). Waller, as cited in Meier (2011) and Maslowski (2006), was one of the first to suggest that schools were institutionalized miniature societies that had cultures that were definitely their own. Even with an abundance of studies on the concept of culture, there has not been an agreed upon definition of what school culture actually is. As a matter of fact, Meier (2011) writes in his paper that “An extensive body of literature has been developed in the area defined as school culture and equally widespread are the definitions utilized in the field in an effort to describe it” (pp. 805-806). Waller (2011) writes that over 150 definitions have been used to describe school culture.

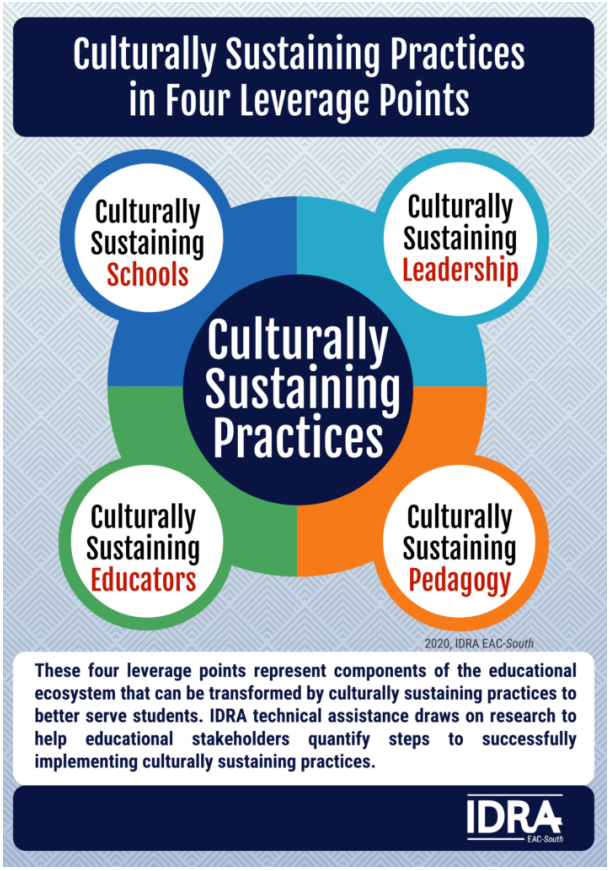
Whatever definition is used to describe **school culture**, teachers play a vital role in the establishment of a school’s culture. The way teachers respond to school culture will likely be influenced by the community in which they teach and live (Bell & Kent, 2010, p. 12). The culture of a school is often taken for granted, but according to the research conducted by Meier (2011), “… a school’s culture is the 31 most powerful predictor of a teacher’s work within that school” (p. 806). Meier (2011) suggested that the culture of a school will determine what teachers deem to be important, the structure of their classrooms, the success of their individual goals, their work ethic, and how they identify with the school (p. 806).

However, one of the things that teachers can do is facilitate their classrooms utilizing **culturally relevant pedagogies (CRP)**. Hernandez (2022) writes about the difference between in-service and pre-service teachers. She cites the work of Lecorchick and Perterson (2019) and describes in-service teachers as those who have completed all their academic and pre-service teacher training and are certified educators that are currently teaching in the classroom (Hernandez, 2022, p. 1). While pre-service teachers are not trained to teach diverse student classrooms, so when they enter in-service teaching, they are not prepared to teach in diverse classrooms (Hernandez, 2022, p. 1). Hernandez (2022) suggests that pre-service teachers incorporate the idea suggested by Ladson-Billings (1990) of viewing what is right with students of color instead of what is wrong with students of color. By adopting this mindset, pre-service teachers will start to challenge the preconceived stereotypes of students of color, thus seeing the cultural strengths their students bring into the classroom. Teachers utilizing CRP measures will focus on three broad categories of teaching, which are academic achievement, cultural competency, and sociopolitical awareness. Hernandez (2022) states, "Teachers in CRP engage with students to help them acquire the skills that are essential for academic achievement, and individuals’ differences are respected in the classroom environment. Teachers that use CRP aid students in achieving student excellence as well as personal development in a variety of settings" (p. 2). Lastly citing the work of Vescio (2016), Hernandez (2022) writes, "The primary premise of CRP is for educators to become cultural translators or bridge builders between a student’s prior cultural knowledge and what is being taught in the classroom. CRP enables educators to take a student’s everyday lived cultural experience and make appropriate classroom connections through examples, comparisons, and contrasts to what needs to be taught" (p. 3).

In order for teachers to sustain CRP strategies in their classrooms they must develop **culturally sustaining practices**. When it comes to improving the culture of schools’ teachers play a vital role. However, the culture of a school does not come into being or improve overnight through the will power of a few teachers (Jackson, 2003, pp. 583-584). Change occurs through the sustained efforts of teachers who recognize the worth of teaching all students. Jones (2005) encouraged teachers to use the cultural identities of their students to create class environments that recognized the cultural contributions of all students (p. 150). Jones (2005) suggested that teachers use the 12 attributes of culture identified by Cushner, McCielland, and Safford (2000) to better facilitate instruction. The 12 attributes are ethnicity/nationality, social class, sex/gender, health, age, geographic region, sexuality, religion, social status, language, ability/disability, and race (p. 150). Approaches that give all students a chance to experience academic success and allow them to develop “… a critical consciousness through which they may challenge social injustice” (Jones, 2005, p. 151) are also known as culturally relevant pedagogy or culturally relevant teaching. Incorporating the 12 attributes of culture will allow teachers to sustain CRP in their classrooms.

Figure 4

Framework based on current research in culturally sustaining eduation



The frame comprises key leverage points: schools, leadership, educators and pedagogy. This gives educators a path to quantify steps for identifying data points, situating student outcomes through an equity lens, identifying capacity-building needs, creating spaces for continuous community input and support, and evaluating success.

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Military-Connected Youth

Vicki Sherbert

Who are Military-Connected Students?

The *Strengthening Career and Technical Education for the 21st Century Act* (2018) defines **military-connected students** as "youth with a parent who is a member of the armed forces and is on active duty." *Families on the Home Front* (2016) defines a military-connected student as "a child, adolescent, or student with a close family member (parent, step-parent, sibling, step-sibling, cousin) or friend serving in any branch of the United States Armed Forces and any status Active Duty, Reserve, or National Guard."

As of April 2023, Patricia Montes Barron, deputy assistant secretary of defense for Military Community and Family Policy, stated there were 1,602,261 military children, youth, and teens serving alongside military service members. Children of military members may have one or both parents in the military. They may live on or near a large military base or they may come from geographically isolated commands. Military families move, on average, every two to three years and military children may change schools six to nine times between kindergarten and high school graduation. (U.S. Department of Defense, 2023). There are military connected students in every school district in the United States (Families on the Home Front, 2016).

Military families are a diverse population with diverse needs. They come in many forms that include categories familiar to civilian life (two-parent, single-parent, etc.) as well as forms unique to the military (dual-service families in which both parents are service members). The needs of military families, and hence the needs of military-connected students, change over time as they move through personal and military service transitions (Clever & Segal, 2013).

Why Should Military-Connected Students Be Given Special Consideration?

All of us awaken each day to stresses and strains that simply go along with daily life. Developmental and physical changes, peer relationships, family interactions, school transitions are considered **normative stressors** that occur as part of normal development. Military-connected students may experience even greater concerns, worries, and levels of stress as they consider the effect of military conflict on world events and the impact of their own lives (Sherbert, 2011; Oates, 2002). Frequent moves and relocation, juxtaposition of family structures, and changing schools are typical challenges for these students. But when a student is faced with the deployment of a family member to a war zone or area of military conflict, **non-normative stressors** occur above and beyond those associated with normal development (Sherbert 2011; Huebner, Mancini, Wilcox, Grass, & Grass, 2007; Huebner & Mancini, 2005).

What is ‘deployment’?

The National Child Traumatic Stress Network (NCTSN) defines **deployment** as “the name given to the movement of an individual or military unit within the United States or to an overseas location to accomplish a task or mission. The mission may be as routine as providing additional training or as dangerous as a war” (p.3). NCTSN describes deployment as having three phases: **pre-deployment** in which the service member prepares to mobilize, **deployment** when the service member becomes geographically separated from the family, and **post-deployment** in which the service member returns home and is reunited with the family.

When military-connected students function within the deployment cycle, they often cope with the concept of ambiguous loss. **Ambiguous loss** is defined as a loss that is vague, unclear, and indeterminate (Boss, 2007; Huebner, et al, 2007). When military families are facing deployment, each phase is replete with uncertainty. When the pre-deployment phase begins, even though the family member may be still residing with the family, they may be away from home many more hours each day as special training sessions to prepare for mobilization are required. Even when they are at home, they may be distracted or on edge. Even though they are still present, in one sense they may have already begun to leave. Once the deployment actually occurs, the greatest ambiguity at an emotional level may be evidenced by thoughts of safety and harm. The student knows their family member may be in harm’s way but will not likely know how close to the conflict or danger their loved one is. A military-connected student may or may not have regular contact with their family member and this adds another non-normative stressor to their daily lives. In the post-deployment phase, the family member returns home, and the family is reunited. While this is a time of celebration, a period of readjustment ensues. Military-connected students still may experience ambiguous loss depending on the emotional and physical condition of their loved one. If the military service member is changed in some way, the student may experience yet another sense of loss (Sherbert, 2011; Huebner, et al, 2007).

Even when the family of a military-connected student is not currently in some phase of deployment, coping with the uncertainties of military life can be daunting. The impact of the non-normative stressors of the lived experiences of military life can be both positive and negative. Military connected students often develop resiliency and a breadth of life experiences unique to military life. Moving to a new geographic location can be both stressful and exciting. Students may have the opportunity to experience different languages and cultures. However, there are potential logistical challenges associated with moving to a new school. Because of differences in timing and format among school districts across the nation, when they arrive at a new school, military-connected students may find some subject lessons repetitive, or they may miss other content lessons entirely. Delays in transferring school records, sometimes taking weeks or months, may mean that students aren’t placed in their appropriate classes or support services (Clever & Segal, 2013). As these families navigate the challenges of relocation, there are things educators can do to support military-connected students as they acclimate to new situations.

Effective Instructional Strategies to Support Military-Connected Students

There are many instructional strategies educators can employ to support all students that are especially helpful for military-connected students and their families as they navigate transitions and challenges. In the classroom educators should

- Establish routines that are consistent and expectations that are clear. Provide visual schedules to assist students as they navigate through their day. Offer reminders to the whole class rather than singling out students new to the class. Be sure to explain terms, activities, or traditions that are specific to your school or district.
- Look for academic gaps and help students begin to bridge them. Use preassessments and formative assessments to gain insight into students' content knowledge. Establish mentoring partnerships between students who have previous experience with the material and those who are encountering it for the first time or need a bit of a refresher (Fiechtner, 2020).
- Learning activities that allow students to utilize literacy practices can help students improve their reading and writing skills as they process normative and non-normative stressors associated with their unique circumstances. Literacy practices may include
- Keeping a journal, writing for a few minutes every day. Students may respond to prompts to spark their thinking or may write about whatever comes to mind.
- Engage in art activities. Creating art is a form of literacy. Painting, drawing, sketching, writing song lyrics, or composing music can offer students an opportunity to creatively express feelings about their circumstances.
- Writing poetry or stories offers students a space to process thoughts and examine experiences by putting them on paper or recording them to a digital file (Sherbert, 2011).

Effective Interpersonal Strategies to Support Military-Connected Students

It is significantly important that educators build early relationships with military-connected students who are part of the learning environment. While some students may be eager to share about their lived experiences regarding military life, others may not want to be singled out or identified as military-connected. Helping students feel welcome can begin simply with a one-to-one conversation with each individual. Conversations can begin with a sincere statement that the educator is happy the student has joined the class. Follow up statements or questions could include *Please let me know how I can help you get settled in our classroom/school. If there is something you are worried about, please let me know and we can talk through your concerns. Is there anything you'd like to share with the class at this time, or would you like to wait a few days until you feel more settled?*

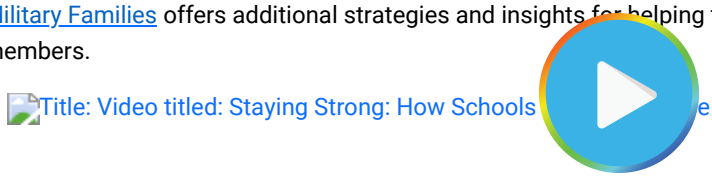
- In focusing on relationships, give new students opportunities to share their unique experiences with you or their classmates. In conversations, take time to learn about where students have been and what experiences they hope to have in this new location. Also give other students a chance to share what is special about this school or about living in this community.
- Consider seating arrangements that allow military-connected students to make new acquaintances without having to initiate encounters with established peer groups (Fiechtner, 2020)
- Offer students materials and space to write cards or letters to a deployed family member. Allowing students materials, time, and space to compose written messages either on paper or digitally can give them time to process their thoughts and decide what they want to communicate with their loved one.
- Create opportunities for students to participate in small group discussions. These moments of connection can benefit all students as they learn to ask questions, listen to peers, and communicate their own ideas.
- Find out if there are support groups within the school setting that might be of interest or help to your students (Sherbert, 2011).

Below is a table of resource links and brief descriptions.

Resource	Description	Link
6 Ways Educators Can Support Students of Military Families	Tools educators may already have in place to transform learning for military-connected students	https://www.military.com/spouse/5-unique-facts-about-military-children-and-their-families.html
3 Ways to Support Military Kids in the Classroom	Military kids tend to be resilient, but moving around	https://www.edutopia.org/article/3-ways-support-military-kids-classroom/

	a lot is still tough. These strategies can smooth their transition to a new school.	
Advocating for Military Children	A resource guide for educators and community partners, child and youth program	https://schoolresources.militaryfamilies.psu.edu/wp-content/uploads/2017/08/Educator-Update-with-DMR-v3.pdf
Fast Facts about Military Connected Youth – Professional Development for Teachers and Staff	Definitions, facts, and other resources	https://familiesonthehomefront.com/fast-facts-about-military-connected-youth-professional-development-for-teachers-and-staff/
Military Child Education Coalition	Digital resources for students, parents, education professionals, and influencers	https://www.militarychild.org/resources
5 Unique Facts about Military Children and Their Families	Visual and audio descriptions of military children	https://www.military.com/spouse/5-unique-facts-about-military-children-and-their-families.html
Military Child Well-Being Toolkit	Resources for supporting the well-being of military-connected (and all) students	https://www.militarychild.org/wellbeingtoolkit
Military Initiatives	Resources compiled by Kansas State University's College of Education to support military-connected students, including a list of picture books, middle grade and young adult books, and other resources	https://www.coe.k-state.edu/about/initiatives/military.html

Educators and schools can support military-connected students and their families through thoughtful communication and consideration of their unique lived experiences. The following video Staying Strong: How Schools Build Resilience in Military Families offers additional strategies and insights for helping the students and families of our military service members.



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Dyslexia

Building a Knowledge Base for Secondary Educators

Laurie Curtis

Teaching is a profession that makes a difference in the lives of others. One of the most important things we can provide students is the ability for them to continue learning beyond the walls of any individual classroom. Assuring that students are competent and confident readers is an important role for all educators to assume, as it empowers students to reach their full potential. Unfortunately, some students reach middle and secondary classrooms without the ability to read and write proficiently. Many of those students do not want to be identified for additional assistance. They don't want others to know that they struggle daily and yet show up at school every day expecting to be asked to do things they find beyond their grasp.

There are many reasons students find reading so difficult. Some students may have moved in and out of schools without the opportunity to receive coherent instruction. Students may have been in classrooms without exemplary instruction and when provided that, will "bloom". Perhaps students are navigating learning in a 2nd language when they may or may not have a strong grasp of academic language in their 1st language. There are students with severe cognitive disability and reading may always be out of their grasp. Some students, however, may benefit from a different approach to reading instruction and additional support- support that *can* be provided in the general PK-12 classroom for all students. The purpose of this writing is to provide an overview for what might inform educational practice in literacy for those working with middle or secondary students who struggle with reading. Students faced with daily academic struggle need a caring adult, whether that be a parent, guardian, advocate, or teacher to understand what their classroom experience is and isn't. Perhaps that person is you.

What is the Science of Reading?

Science of Reading is a term frequently seen in state policy work, brandished by curriculum developers, seen in educational news reports, and passionately discussed on the social media pages of literacy organizations. For clarification, the "**Science of Reading**" is not a curriculum or a specific methodology, but a body of knowledge related to how the brain learns to read and write and how instruction can best be delivered to assist ALL students in acquiring literacy skills and strategies. The science of reading is growing and will continue to grow as important research is conducted, reviewed, and disseminated. Many curriculum developers in today's markets advertise products "aligned with the Science of Reading", and it is important that educators are knowledgeable consumers when tasked with adopting a new core curriculum or supplementary materials for teaching. Being familiar with the tenets of the science of reading, specific evidence-based practices, and content standards will allow teachers to make smart curriculum decisions. The knowledge received through your educational preparation program, the school policy where you work and the curriculum you use have important implications for helping all students achieve their full potential. Teachers make a difference and while you may not be an expert at teaching reading, you are an expert at reading in your content area and you will be the one who can help your students develop that expertise as well. The following information will

start to build a foundation related to the science of reading and dyslexia. However, a foundation isn't a livable structure, so continue to read and follow information that comes from well-designed studies as the science of reading continues to evolve.

What do you know about dyslexia?

Complete these simple questions and seek confirmation of your responses as you read this chapter.

True or False

1. Dyslexia is identified by students flipping letters around and/ or reading words backward.
2. Students can outgrow dyslexia with good instruction.
3. More boys than girls have dyslexia.
4. Dyslexia runs in families.
5. Poor teaching in the early grades causes dyslexia.
6. By the time a student reaches 8th grade the opportunity to learn to read has passed.
7. Anxiety is often associated with dyslexia.
8. The primary problem that secondary students with dyslexia have is poor comprehension.
9. Dyslexia is often accompanied with lower-than-average IQ.
10. Approximately 4% of students in our schools exhibit characteristics of dyslexia.

How is dyslexia defined?

Dyslexia is not new. While recorded in writings as early as the sixteenth century, it was named dyslexia as early as 1887 by Rudolph Berlin. Earlier writings referred to it in other terms, such as "word blindness". The first academic paper on the topic of **dyslexia** was known to be published in 1896 by William Pringle Morgan in the *British Medical Journal* (Kirby & Snowling, 2022). Since that time there have been various misunderstandings about what dyslexia is or is not.

One of the most prevalent misunderstandings is that students have dyslexia if they reverse letters or write words backward. Most young students exhibit that behavior as they are learning to read and the behavior will extinguish with instruction. Dyslexia is also not a problem with vision or words "jumping" about on a page. Dyslexia is not "corrected" with a special font or color overlay. Those have not been found beneficial in outside research studies. (Cowen, 2018). It would be nice if there was an easy "fix", but dyslexia is life-long condition. Students do not grow out of dyslexia, but they can learn ways to accommodate for their difficulty through good instruction and support.

The definition used most often in education and state legislative action is the definition developed by the Definition Consensus Project (https://dyslexiaida.org/definition-consensus-project/). This definition was adopted by the International Dyslexia Association board of directors in 2002 and in Kansas, this is the definition that was adopted by the Kansas State Board of Education to guide the work of the Kansas State Department of Education. The definition states:

> *Dyslexia is a specific learning disability that is neurobiological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding*

> *abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge.*

To identify how this definition impacts classroom practice, it is helpful to explore the individual elements within the definition.

Dyslexia is a specific learning disability.

In special education law, dyslexia is recognized as a specific learning disability and the term dyslexia can appear on a student's **Individualized Educational Program (IEP)** if a student has qualified for special education services. That being said, dyslexia presents on a continuum and many students who have characteristics of dyslexia are not being served within a special education model of instruction, but are in general education classrooms receiving their academic preparation by classroom teachers. Students do NOT need to be identified as "dyslexic" to receive t**iered support** in a general education classroom. Any student who is determined to be at risk on a universal screener or other diagnostic measure can receive tiered support through their school's **MTSS** protocol. With the incidence of dyslexia reported to be anywhere from 10-20% of the population, it is important that every teacher understands what dyslexia is and how it may impact classroom behavior and academic outcomes. (Yale Dyslexia FAQ https://dyslexia.yale.edu/dyslexia/dyslexia-faq/; Cleveland Clinic, https://my.clevelandclinic.org/health/articles/6005-dyslexia).

Dyslexia is neurobiological in origin.

The brain does not have a "reading center". Instead, our brains utilize various other structures (those involved with vision, language processing and speech production) to create a system that supports taking print off a page, associating it with sound and linking it with meaning to communicate. Through functional magnetic resonance imaging (fMRI studies), we know that those with dyslexia struggle to engage the more efficient pathways to connect sounds to print when learning to read. Dyslexia is found to affect nearly the same number of girls as boys and is not specific to certain socioeconomic groups or language. Dyslexia is often an inherited trait, and if a parent has dyslexia a child has a 40-60% greater risk for being affected. The percentage is even greater if others in the family have it as well (Schumacher et al, 2007).

It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities.

As students are learning to read and strengthening the pathways to efficient reading, those with dyslexia will struggle in hearing the sounds in words, identifying what letters represent sounds in words- in breaking the code of our language. Students who are becoming proficient readers can **orthographically map** (OM) words for quick retrieval when reading in the future. Orthographic mapping occurs when students hone letter-sound connections with the spelling, pronunciation, and meaning of specific words and commit those to memory (Ehri, 2014). While it is common for very young children to struggle with this until they have been explicitly taught and had time to practice new words, students with dyslexia continue to struggle beyond what is usually experienced by new readers. Students with characteristics of dyslexia may find it extremely difficult to hear individual sounds in words (**phonemes**) and associate the correct letters (**graphemes**). With 26 letters and 44 sounds and multiple ways to "spell" sounds in the English language, intentional phonics instruction is critical. For example, consider even these simple words and how the long /a/ sound is represented: bay, eight, rein, train. English is referred to as an "opaque" language, meaning its letter/sound correspondence has elements that are unseen or difficult to discern, mainly because the English language borrowed words from other languages which has influenced our spelling patterns.

These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction.

This difficulty in reading is often unexpected and is not discovered until a student begins school and is asked to work in a print environment. Students with dyslexia often have average or high intelligence and frequently are very good at listening comprehension, which will help them accommodate in classroom work. Slow reading doesn't mean slow thinking and students with phonological/decoding may be very strong in the meaning-making aspects of reading and language. While unskilled teaching does not cause a student to become dyslexic, there is scientific evidence that there are specific ways of teaching that can assist students in accessing the more efficient pathways for reading and allow students with dyslexia to learn to read. fMRI studies have provided evidence that students who receive good intervention can better develop the neural pathways that allow them to decode and read for meaning. You, as a teacher, can be a "brain changer"!

Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge.

It is human nature to avoid things that we find difficult and/or unpleasant. Those who avoid reading, read less, and therefore are not exposed to the same amount of vocabulary and information. Like anything else in life, when you practice things, you get better. Those who enjoy reading, choose to do it more often, are exposed to more information and build stronger vocabularies. It is important that teachers help students who struggle learn to navigate complex texts so they not only find information, but joy and satisfaction in reading. While video content can provide additional context or background information, it should not take the place of students learning how to navigate content grade level texts.

How do we know if a student has dyslexia?

While there are doctors, psychologists or speech language pathologists who specialize in diagnosing dyslexia in clinical settings, schools have professionals in place to identify students with characteristics of dyslexia in order to inform instruction and align interventions based on meaningful assessments. Many states have **universal screening requirements**, as does Kansas, that identify if a student is at risk for reading difficulty. A student that identifies "at risk" on a universal screening measure would warrant further diagnostic assessment to find the specific instructional need the student has. It is important to note that universal screening does not identify if a student is dyslexic, but only that there is risk that should be addressed further.

Assessment protocols depend on local school district, as well as state and Federal guidelines and as a teacher it is important that you understand the guidelines and requirements you should follow. Most often, the formal process of evaluating a student who is not responding to tiered general education support would be led by the district's educational school psychologist, speech language pathologist, or reading specialist.

What is involved in learning to read?

There are several theoretical models that strive to represent what reading entails. One is referred to as the **Simple View of Reading**. Gough and Tunmer (1986) created this model to help identify the importance of **decoding**, or word recognition, in overall reading instruction. It is a mathematical representation stating that word recognition multiplied by language comprehension equals reading comprehension, with the understanding that if either decoding or language comprehension were not present (are zero), reading comprehension would not be achieved. There are other models, such as the **Active View of Reading** (Duke & Cartwright, 2021), being proposed and future research will determine their place in practice.

Figure 1

Simple View of Reading

Gough & Turner, 1986

In addition, one of the more useful models for guiding classroom practice was published by Hollis Scarborough, often referred to as **Scarborough's Rope** (Scarborough, 2001). The lower strands of the rope include elements of instruction related to word recognition and the top strands of the rope delineate the elements related to language comprehension. While this model shows decoding at the bottom and language at the top of the image, it is important to note that these elements are not represented in a chronological way, as language elements such as vocabulary and background knowledge begin at birth. The elements of language comprehension are identified as background knowledge, vocabulary, language structures, verbal reasoning, and literacy knowledge. The strand elements of word recognition include sight recognition, decoding and phonological awareness.

Figure 2

Scarborough's Rope

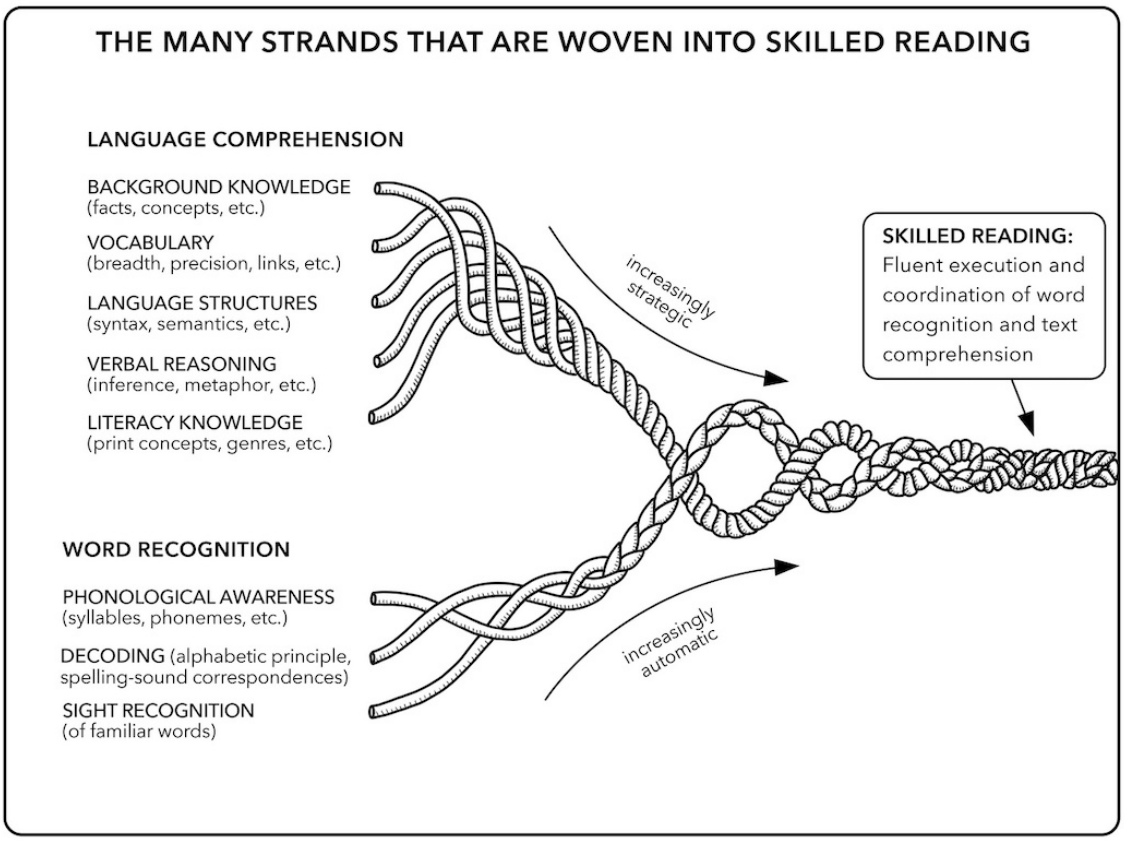


Image Credit: The image, courtesy of the author, originally appeared in the following publication: Scarborough, H. S. (2001). Connecting early language and literacy to later reading (dis)abilities: Evidence, theory, and practice. In S. Neuman & D. Dickinson (Eds.), Handbook for research in early literacy (pp. 97–110). New York, NY: Guilford Press.

What is structured literacy and what does it look like in a middle/ secondary course?

The National Reading Panel report (2000) identified five critical components of literacy instruction. Those include phonemic awareness, phonics, fluency, vocabulary and comprehension. **Phonemic awareness** is involved with the sound system of our language. **Phonics** is the linking of sounds (**phonemes**) to letters (**graphemes**), and the rules and generalizations that guide how words are read and spelled. **Fluency** includes the rate, accuracy, and prosody (expression) of reading and vocabulary includes the meaning and usage of words. **Comprehension** is the ability to understand what is read in a meaningful way. The National Reading Panel Report can be accessed in its entirety here: National Reading panel Report.

Being informed by the National Reading Panel, research has provided evidence that there is a model of reading instruction that is helpful for all students and essential for those who struggle in learning to read. It is a model that is relevant for PK-12 students and has been adopted by some states, including Kansas, as the model of instruction to be used in classrooms. It is called structured literacy and evidence has shown that it provides better outcomes than balanced literacy or guided reading approaches (Lorimor-Easley & Reed, 2019), especially for students who have difficulty with learning to read.

Structured literacy informs not just "what" should be taught, but "how" it should be taught, reflecting the concept that pedagogy matters! This instruction occurs most often in the general education classroom but may be offered in tiered levels of support if the school's tiered intervention assessment/ protocol calls for that. Students should be taught:

- Phonemes and graphemes (sounds and letters and letter patterns)
- Morphemes (meaningful units of words- which would include affixes)
- Syllable and stress patterns (useful in breaking apart larger words for decoding)
- Sentence structure (grammar and punctuation)
- Vocabulary (word meaning/ shades of meaning)
- Text structure (narrative, expository, various genre)
- Integration of reading comprehension and written expression

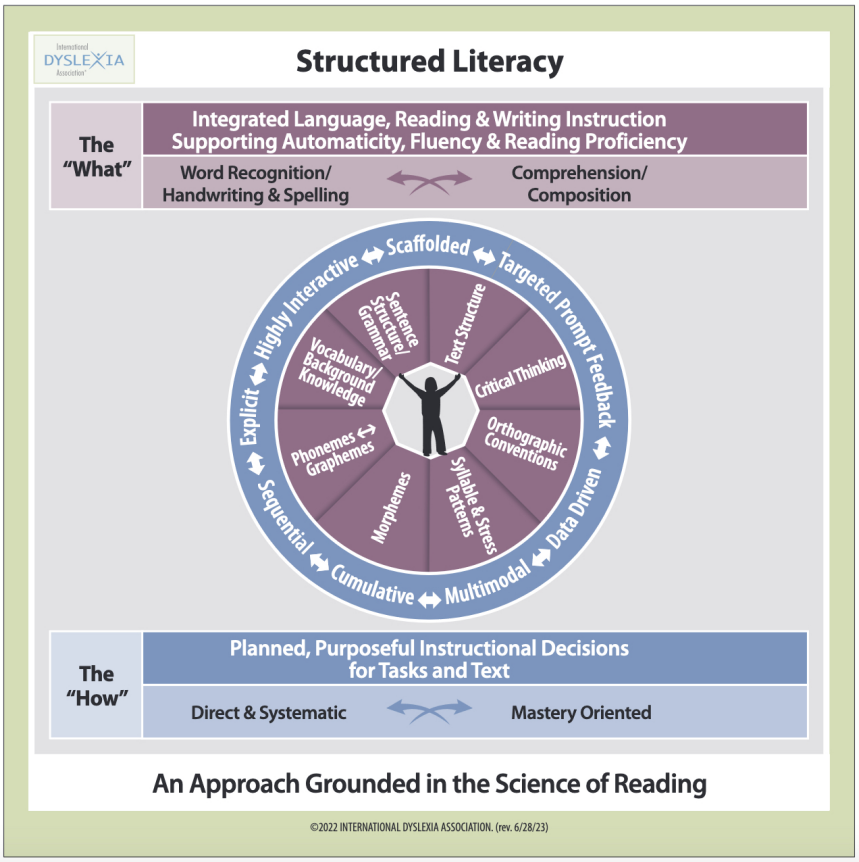
The "how" provides insight into how students learn best and should be supported as they master literacy skills and strategies and become competent readers. Structured literacy establishes that students should be taught with the following principles in mind:

- Explicit instruction (clarity in the learning objective and process)
- Systematic (clear scope and sequence to avoid learning "gaps)
- Cumulative (moving from simple to more complex with review through mastery)
- Prompt and specific feedback
- Data should guide instruction
- Instructional tasks and texts are chosen purposefully

The International Dyslexia Association provides a more complete infographic, Structured Literacy Grounded in the Science of Reading, to provide additional information and support for classroom practice.

Figure 3

Structured Literacy SOR Infographic



So, what if you teach middle or high school and your students are beyond the "learning to read" stage? What are some characteristics of dyslexia that might be seen in an older student?

- Difficulty with accurate word recognition
- Difficulty with spelling
- Avoidance behaviors (specifically in reading/ writing)
- Anxiety reading out loud and a lack of fluency (reading slowly or without expression)
- Reduced vocabulary (tendency to revert to simplified or easy to spell words)
- Large dependence on illustrations and context
- Difficulty with rote memorization
- Difficulty in learning a foreign language
- Students engaging in discussions yet falling behind in reading/writing assignments

There are several common classroom practices that teachers may use without recognizing they cause additional **disfluency**, stress and anxiety for students with reading difficulty. These are practices should be reconsidered, supported differently, changed, or eliminated from practice. These include:

- "Round robin" or "popcorn" reading- asking students to read aloud in front of peers. There is no evidence that this is an effective practice for any student of any level.
- Providing written directions, without providing oral directions and clarification.
- Calling on students to answer literal questions that require skimming and scanning large pieces of text.
- Using ebooks/technology without assuring students know how to fully access tools.
- Allowing inadequate time for students to read required material- in class or at home.
- Asking students to copy large amounts of information from a board or screen.
- Requiring a student to take written notes while someone is speaking.

What can teachers do, then, to support students who are experiencing reading difficulties? Classroom practices that are found to be helpful for students include:

- Pre-reading comprehension planner used when teaching from textbook that creates a plan for modeling, chunking text sections, identifying supports for students- perhaps the use of a text set and provides multiple ways for students to read, analyze and discuss text with others.
- Pre-teaching vocabulary to make sure students have access to key words for the text. Beyond just defining words, break words down by prefix/ root word/ suffix and connect words in meaningful ways- such as using a **Frayer Model**.
- Teaching students about word origin (**etymology**) and how spelling is influenced by other languages.
- SQ3R process of surveying a text prior to reading, creating questions over the text, reading the text, reciting the answers to the questions and reviewing learning
- Partner or paired reading. Rank students by reading ability high to low. Divide the list in half and overlay, so the first name on the top of the list reads with the top name on the lower half. Reading, annotating text and discussion can occur in these pairs. The teacher should be positioned to assist those pairs who need additional support.
- Graphic organizers chosen with student input. Include the students in determining a style or type of graphic organizer while teaching text structure and what might be chosen to facilitate comprehension (descriptive/ web; chronological/ timeline; compare and contrast/Venn diagram or T-Chart; narrative/Plot diagram, etc.)
- Utilize a **gradual release of responsibility model**. Provide clear expectations and model with a think-aloud how students should approach the text. Determining questions to ask, work through part of the text together. Next, provide an opportunity for students to work through the next section of text independently, while you stop to offer timely and accurate feedback.
- If you are not teaching or assessing a student's ability to read and write, allow students other ways to demonstrate mastery of content. Creating a presentation, illustration, model, song, or speech, etc.
- Have supportive conversations with students you think are struggling to read at grade level. Use your school's screening data to see how you might offer additional support.
- Consider the table below and determine how you might support students of all reading abilities in the work of reading and writing as an expert in your content area.

Figure 4

Disciplinary Suggestions

	Read	Write	Think
Science	***When scientists read, they*** • Ask "Why?" more than "What?" • Interpret data, charts, illustrations • Seek to understand concepts and words • Determine validity of sources and quality of evidence • Pay attention to details	***When scientists write, they*** • Use precise vocabulary • Compose in phrases, bullets, graphs, or sketches • Use passive voice • Favor exactness over craft or elaboration • Communicate in a systematic form	***When scientists think, they*** • Tap into curiosity to create questions • Rely on prior knowledge or research • Consider new hypotheses or evidence • Propose explanations • Create solutions
History	***When historians read, they*** • Interpret primary and secondary sources • Identify bias • Think sequentially • Compare and contrast events, accounts, documents and visuals • Determine meaning of words within context	***When historians write, they*** • Create timelines with accompanying narratives • Synthesize info/evidence from multiple sources • Emphasize coherent organization of ideas • Grapple with multiple ideas and large quantities of information • Create essays based on argumentative principles	***When historians think, they*** • Create narratives • Rely on valid primary and secondary sources to guide their thinking • Compare and contrast or ponder causes and effects • Consider big ideas or inquiries across long periods of time • Recognize bias
Math	***When mathematicians read, they*** • Use information to piece together a solution • Look for patterns and relationships • Decipher symbols and abstract ideas • Ask questions • Apply mathematical reasoning	***When Mathematicians write, they*** • Explain, justify, describe, estimate or analyze • Favor calculations over words • Use precise vocabulary • Include reasons and examples • Utilize real-word situations	***When Mathematicians think, they*** • Consider patterns • Utilize previous understandings • Find connections • Estimate, generalize, and find exceptions • Employ mathematical principles
English Language Arts	***When students of English read, they*** • Understand how figurative language works • Find underlying messages that evolve as theme • Assume a skeptical stance • Pay attention to new vocabulary or words used in new ways • Summarize and synthesize	***When students of English write, they*** • Engage in a process that includes drafting, revising, and editing • Use mentor texts to aid their writing craft • Pay attention to organization, details, elaboration and voice • Rely on the feedback of others • Avoid formulaic writing	***When students of English think, they*** • Reflect on multiple texts • Ask questions of the author • Consider research or others ideas • Discuss ideas and themes • Argue both sides of a point

In Summary

In this section you have been introduced to the science of reading and a working definition of dyslexia and theoretical models that inform much of the research being conducted on reading disability today. You have read about the basics of structured literacy as a model of instruction that is helpful for all students and critical for those with characteristics of dyslexia. You also were introduced to some helpful classroom practices as well as practices to avoid avoid when working with middle and secondary students who have characteristics of dyslexia. Those techniques and strategies that are critical for those students who struggle will benefit all students.

The unfortunate reality is that you will encounter students in middle and secondary schools who are unable to read, spell and/ or write. Somehow, they have been able to move through a system with limited ability to achieve their full potential, unless someone intervenes. Perhaps that someone will be you. They may have faced years of failure and yet come to school each day ready to try again. When you see these students, makes sure you are aware of the process in your building for getting them the help and academic support they need. It is not too late to teach secondary students how to read, and it is essential that the focus is not only on helping them graduate, but on helping them graduate with the skills and abilities that will allow them to achieve their full potential. Thank you for being an educator. Literacy changes lives.

Answers to the Questions

True or False

1. Dyslexia is identified by students flipping letters around and/ or reading words backward.

False, many students do that. Dyslexia is not a vision problem, but difficulty with the phonological system of language.

2. Students can outgrow dyslexia with good instruction.

False, dyslexia is life long, but individuals can improve in reading and learn to utilize supportive strategies and/ or materials

3. More boys than girls have dyslexia.

False, although they have been referred more often

4. Dyslexia runs in families.

True, A parent of a student identified and siblings often share this difficulty

5. Poor teaching in the early grades causes dyslexia.

False, poor teaching does not cause dyslexia, but high quality instruction is found to help students gain skills for reading

6. By the time a student reaches 8th grade the opportunity to learn to read has passed

False, individuals can learn to read at any age, although it may take longer and more intensity

7. Anxiety is often associated with dyslexia.

True, anxiety is often associated with dyslexia and can be heightened by classroom practice that highlights a student's struggle in front of peers

8. The primary problem that secondary students with dyslexia have is poor comprehension.

False, poor comprehension is a secondary problem for secondary students, with decoding and poor fluency causing an inability to comprehend.

9. Dyslexia is often accompanied with lower-than-average IQ.

False, dyslexia is often unexpected as students may be at average or high IQ, yet struggle greatly in learning to read

10. Approximately 4% of students in our schools exhibit characteristics of dyslexia.

False, the incidence numbers most often between 7-20%, but the most often statistic is between 10-20% of people being affected along the continuum.

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Where can I go to learn more?

Check out these hyperlinked resources for additional support.

1. International Dyslexia Association, specifically the tabs About Dyslexia, Resources, and Professionals
2. The National Center for Improving Literacy
3. The Reading League
4. Kansas State Department of Education Dyslexia Page

SECTION 4

The Learning Environment

Learning environemnts are much more than just a classroom. These are spaces where students grow and develop as learners and people--spaces where they should feel safe and nurtured. The following chapters will discuss elements that impact the learning environment and those within it.

Affective Elements

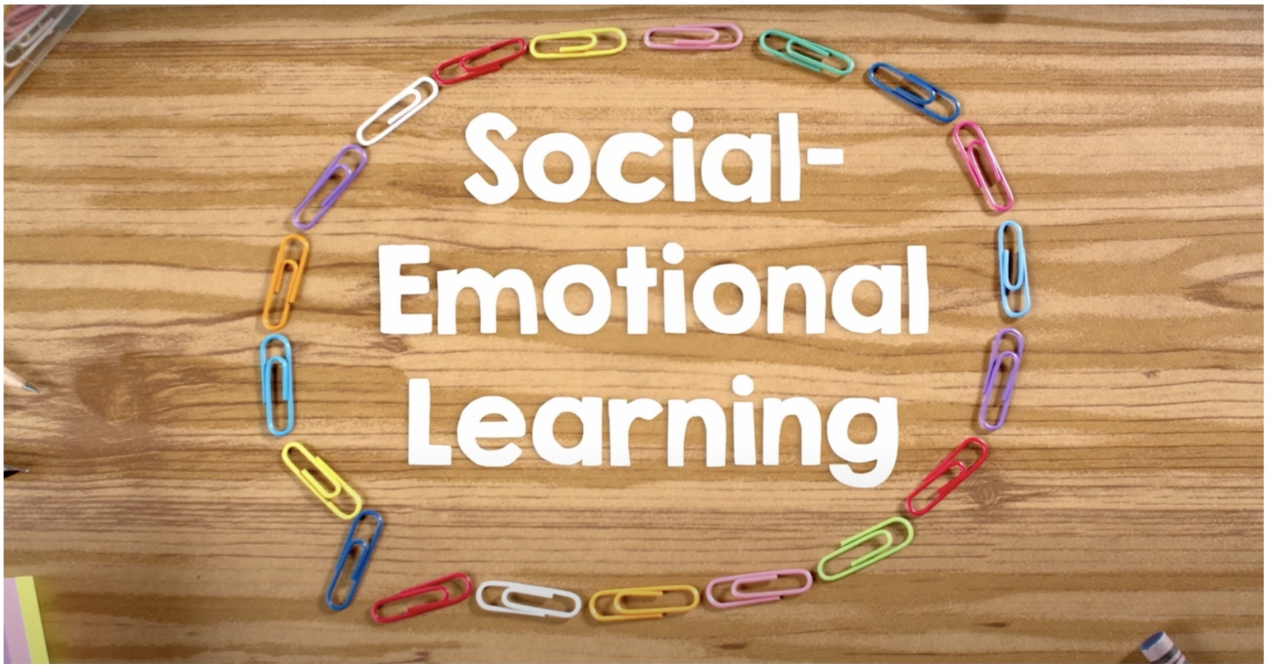
Madisyn Shaneyfelt

Social-emotional learning (SEL) encompasses a range of affective elements that are crucial for student development. These competencies help students navigate challenges and enhance their overall well-being. By integrating SEL into education, schools address the affective aspects of students' lives and provide them with tools to manage emotions, build positive relationships, and make responsible decisions. Additionally, bullying prevention, crisis prevention, and suicide prevention strategies all involve understanding and addressing students' affective needs and encouraging the promotion of a safe and supportive learning environment. By prioritizing affective elements, schools can foster a holistic approach to education that supports students' physical, emotional, social, and academic growth.

Social Emotional Learning

Social-emotional learning (SEL) is an educational method that aims to develop students' self-awareness, self-control, and interpersonal skills necessary for school, work, and life success. SEL equips students with the tools to manage and express their emotions appropriately. Students who exhibit strong social-emotional skills show greater resiliency when faced with future challenges; therefore, SEL benefits students academically, professionally, and socially (Committee for Children, 2023). Schools with SEL-integrated curricula noticed reduced physical aggression, bullying, and dropout rates among their student body (Espelage et al., 2015). SEL also contributes to increased student attendance, academic achievements, and positive perceptions of school (Durlak et al., 2017).

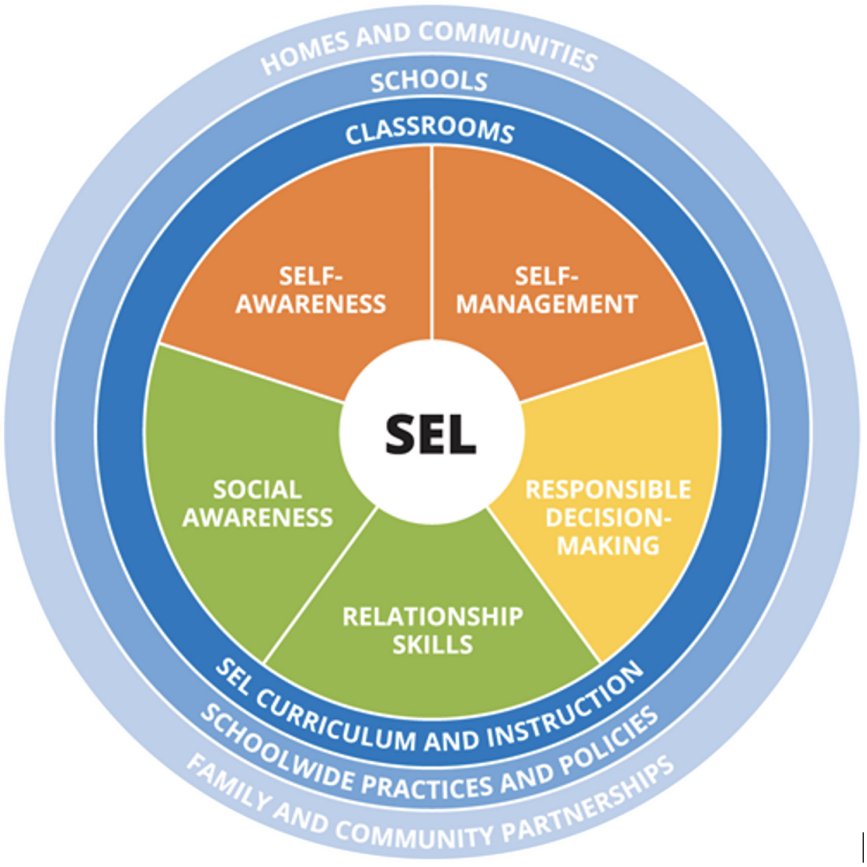
Social-Emotional Learning: What Is SEL and Why SEL Matters



Video Description: The creators of Second Step show what social emotional skills are and the important role they play throughout our lives. | *Video Length:* [2:53]

Figure 1

SEL Core Competencies



Five Core Competencies of SEL

SEL incorporates five core competencies applicable in classrooms, schools, homes, and communities (CASEL, 2023). These five core competencies include:

- *Self-Awareness:* the ability to recognize the impact of emotions, thoughts, and behaviors
- *Self-Management:* the ability to regulate emotions, thoughts, and behaviors in different situations
- *Social Awareness:* the development of perspective about, and empathy for, others; an understanding of social and ethical norms of behavior
- *Relationship Skills:* the ability to establish and maintain healthy connections with others
- *Responsible Decision-Making:* the ability to make possible constructive and respectful choices about personal behavior and social interactions

Culturally Responsive SEL

Students who experience racial, ethnic, or gender discrimination, economic disparities, or traumatic incidents often develop unique coping mechanisms that may not always align with social norms. When implementing SEL, teachers must consider students' cultural, racial, ethnic, linguistic, and economic backgrounds. In doing so, they acknowledge

and appreciate their students' cultural assets and inherent strengths. Students feel a greater sense of respect and value when their identity is recognized and are, therefore, more likely to engage in SEL meaningfully.

Resources for Incorporating SEL

Resources	Description
Resources on Social Emotional Learning (SEL) and Student and Educator Mental Health	Resources developed by the NEA to offer strategies for educators to manage stress, practice self-care, and build SEL skills with their students
95 Free Social Emotional Learning Activities	Free SEL lessons, activities, and worksheets for educators to use in a classroom or small group setting.
KSDE Social, Emotional, and Character Development Standards and Learning Resources	SEL information for Kansas schools to use as a framework for learning

Bullying Prevention

The National Centre Against Bullying (NCAB) defines bullying as "an ongoing and deliberate misuse of power in relationships through repeated verbal, physical, or social behavior that intends to cause physical, social, or psychological harm." (2023). Bullying negatively impacts students' ability to learn at school because it threatens their physical and emotional safety. Research indicates that responding quickly and consistently is the best way to address bullying (StopBullying.gov., 2023).

Classroom Bullying Prevention

School administrators and educators can incorporate various **bullying-preventative measures** to increase the safety of their schools. Educators can incorporate bullying prevention topics into their lessons and activities to help engage students in the initiative. A list of activities to teach students about bullying can be found here.

School-Wide Bullying Prevention

School staff contributes to bullying prevention and intervention by modeling respectful relationships and developing a positive school climate. Consistent training on bullying prevention maintains staff's awareness of and active response to bullying. School-wide bullying prevention strategies establish consistent expectations and guidelines for appropriate behaviors among students. In 2017, the Colorado Department of Education (CDE) examined various evidence-based bullying prevention programs; they stated, "By teaching and reinforcing these specific behaviors and peer interactions, staff works to increase positive and prosocial interactions while providing less social attention for negative or inappropriate behaviors." The CDE also released a comprehensive guide for schools to use when selecting a bully prevention program. A comprehensive guide for selecting a bully prevention program can be found here, which analyzes the cost and training requirements among four evidence-based programs.

Bullying Prevention and SEL

Research conducted by Smith & Low (2013) suggests SEL can be an effective element in bullying prevention strategies. The skills taught in SEL encourage prosocial peer interaction and interpersonal problem-solving, which provide students with effective and positive strategies for coping with peer challenges. Additionally, through SEL, students acquire social competence, which helps them develop friendships. Smith & Low claimed that increased social support reduces students' vulnerability to bullying and lessens the negative impact of bullying on their psychosocial development.

Resources for Incorporating Bullying Prevention

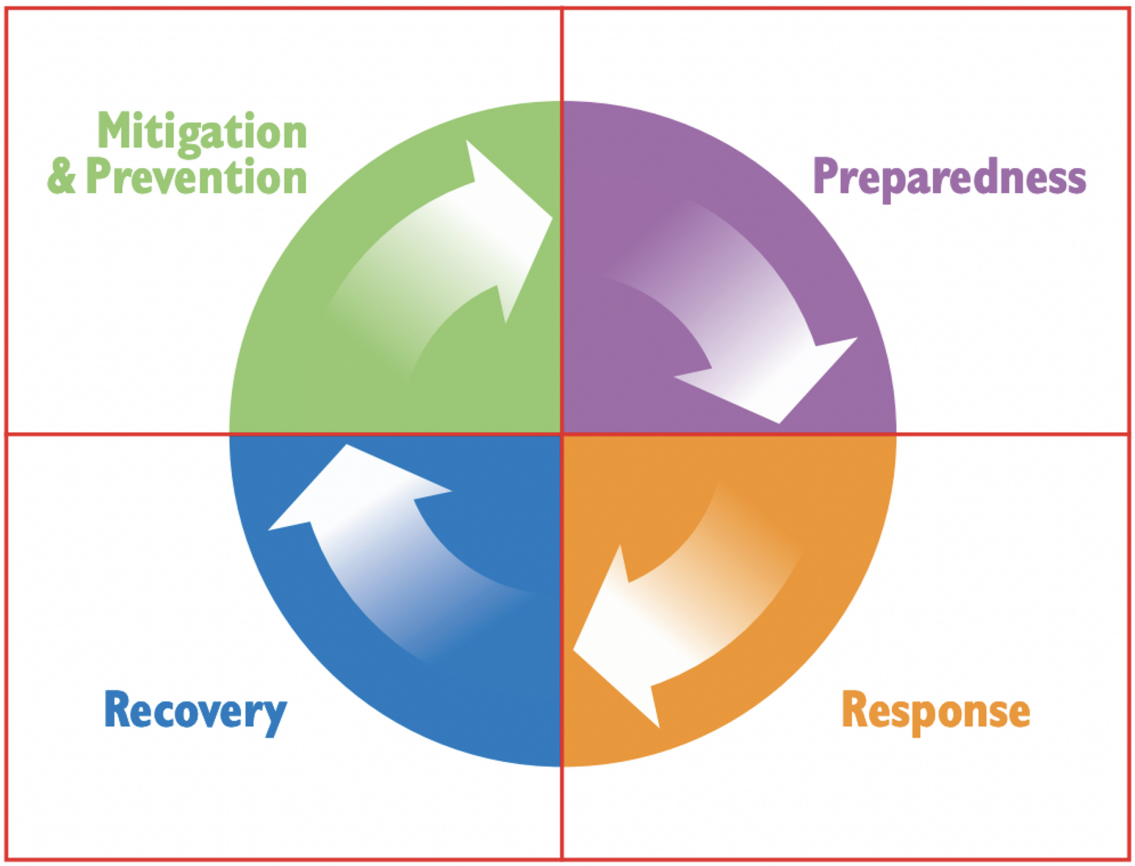
Resources	Description
Bullying Support & Advice: For Schools	Step-by-step guide for what to do when a student reports bullying; additional resources related to bullying in schools
Understanding Bullying	Resources and education on bullying research, signs, and types of bullying, and preventative actions
Building a Safe Environment	Information on managing a safe and supportive classroom environment to help mitigate bullying
Let's Talk About Bullying | TEDx Talks	Nicholas Carlisle, founder of No Bully, shows how schools are engaging kindness and compassion to end over 90% of bullying incidents
10 Ways to Help Reduce Bullying in Schools	List of 10 tips for educators to utilizing in the classrooms to help reduce bullying
Bullying Flowchart	Describes the four elements of bullying ad provides a list of resources for students, schools, and parents

Crisis Prevention

A **school-based crisis** is any traumatic event that disrupts students' and staff's coping and problem-solving abilities (National Education Association, 2018). A crisis refers to a situation that has escalated to a critical phase with the potential for undesirable consequences. Various crises include violent incidents, large-scale fights, student or staff suicide or death, terrorism, or hostage situations. On the other hand, an emergency denotes an urgent situation that demands immediate action. Emergencies include school shootings, natural disasters, medical emergencies, chemical spills, and student disappearances (National Education Association, 2018, pp. 15). Parents and students trust teachers and administrators to protect them while at school. Consequently, school staff must be well-prepared to handle crises and emergencies before, during, and after the event.

Figure 2

Four Phases of School Emergency Management



Four Concepts of School Crisis Preparedness

The four concepts of school crisis preparedness include:

1. *Prevention:* actions aimed to avoid the occurrence of incidents or lessen the harm done by unavoidable incidents
2. *Prepare:* continual planning, practicing, and evaluating responses to incidents
3. *Response:* executing prepared plans while minimizing harm to people and property during an incident
4. *Recovery:* restoring the learning and teaching environment after an incident; evaluating the incident and response to revise and improve school safety and emergency response

Preventative Strategies

Crisis prevention holds significant importance within any comprehensive school crisis plan. It is crucial to emphasize and prioritize strategies that aim to prevent crises from occurring in the first place. To achieve this, open communication and spreading knowledge about prevention plans are essential throughout the school community. All stakeholders, including students, teachers, administrators, parents, and support staff, can actively participate and collaborate to create a safe and secure learning environment through a collective effort. Schools can implement several effective strategies to establish a comprehensive crisis prevention plan:

- Establishing a positive school climate
- Implementing behavioral support systems
- Developing early warning systems
- Providing mental health support
- Conducting safety assessments
- Promoting social-emotional learning (SEL)
- Creating a comprehensive school Emergency Operations Plan (EOP)
- Developing a district-level and school-based crisis response and emergency planning team

By implementing these preventive strategies and engaging the school community in proactive planning, schools can significantly reduce the risk of crises and promote a safe and nurturing environment for all students.

Resources for Incorporating Crisis Prevention

Resources	Description
Kansas Emergency Management Resources	List of Kansas contacts and reports related to school readiness and emergency management
Kansas Crisis & Emergency Mandates	List of Kansas legislature related to disaster relief or crisis prevention programs
Sample School Emergency Operations Plan	Document of a sample school EOP for template and training purposes
American Red Cross Ready Rating Program	A free, self-guided program designed to help schools become better prepared for emergencies
National Education Association (NEA) School Crisis Guide	Step-by-step outline of what to do before, during, and after any school crisis or disaster
U.S. Department of Education Practical Information on Crisis Planning	A comprehensive guide for schools and communities to utilize when developing crisis readiness plans
School Safety and Crisis Resources	List of linked educational resources on implementing school safety policies supporting students during crisis at district and school levels
Systems-Level Prevention Resources	List of linked resources to help schools and districts implement comprehensive and culturally competent school safety policies
Guidelines for Schools Conducting Crisis Exercises & Drills	A comprehensive guide to help schools understand best practices in the development and implementation of various safety exercises and drills

Suicide Prevention

Suicide, the leading cause of death among school-aged youth (Centers for Disease Control and Prevention, 2023), often exhibits warning signs that educators should never take lightly or promise to keep secret. Students contemplating suicide may communicate their distress through direct or indirect statements. They may also leave suicide notes or plans, make final arrangements such as giving away prized possessions, display a preoccupation with death, or undergo changes in behavior, appearance, thoughts, or feelings.

To effectively address these warning signs and provide support, educators should receive training on recognizing signs of suicidal thoughts and engaging with at-risk students (Marshall & Moutier, 2019). Additionally, school districts and educators must identify student populations at elevated risk for suicidal behavior.

Preventative Strategies

To establish effective preventative procedures, schools can implement the following:

- *District Policy Implementation*: establish a suicide prevention task force to advise district administration and the school board on suicide prevention activities and policy implementation
- *Staff Professional Development*: provide training for staff on risk factors, warning signs, protective factors, response procedures, referrals, postventions, and available resources concerning suicide prevention
- *Youth Suicide Prevention Programming*: integrate suicide prevention curriculum from kindergarten to twelfth grade, promoting safe and healthy choices, teaching coping strategies, recognizing risk factors and warning signs of mental health concerns, providing suicide resources and referrals, and building resilience among students.

By implementing these cohesive measures, schools can take significant steps towards creating a supportive and proactive environment for preventing youth suicide and promoting mental well-being among students.

Resources for Incorporating Suicide Prevention

Resources	Description
Model School District Policy on Suicide Prevention	Outlines model policies and best practices for school districts to follow to protect the health and safety of all students
Suicide Prevention Resource Center	List of suicide prevention resources and action plans for teachers and school personnel
The Trevor Project Resource Center	Articles, resources, and guides related to LGBTQ+ youth suicide
K-12 Suicide Prevention Training & Resources	Postvention training and printable available for teachers to utilize after a suicide attempt or death
American Foundation of Suicide Prevention	A list of AFSP programs that can be incorporated into school suicide prevention plans
Postvention Action Plan for School Staff	Detailed action plan for school staff to incorporate after a suicide attempt or death
Preventing Youth Suicide	Facts, tips, and resources relevant to preventing youth suicide
Nebraska Department of Education Suicide Prevention Training Resources	Detailed list of suicide prevention resources for parents, teachers, staff, and school districts

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SECTION 5

Teaching as a Profession

Teaching is a very noble profession that shapes the character, caliber, and future of an individual. If the people remember me as a good teacher, that will be the biggest honour for me. -A. P. J. Abdul Kalam

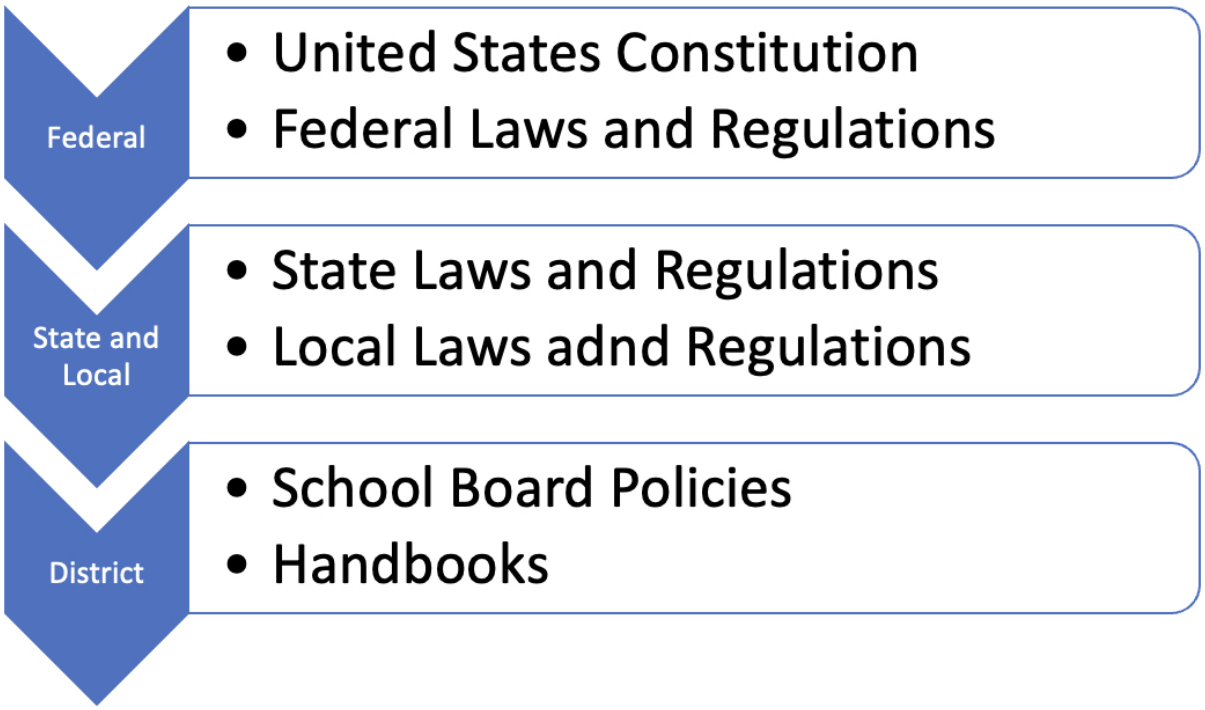
Education Policies

Bret Church

New teachers should be familiar with educational policies and laws related to their role as educators. Understanding and abiding by policies and laws not only protects the teacher, but also in many cases helps to protect students, administrators, and the school district from possible harm. It is important to understand the hierarchy that exists specific to laws, regulations, and policies related to education. Teachers are required to follow all board policies. Therefore, new educators should take time to review the school district policies, as each board of education has the power to develop the policies for their local district.

Figure 1

Educational Policy and Law Hierarchy



Legal Issues for New Educators

As educators, teachers have many legal obligations to ensure that they are providing a safe and effective learning environment for their students. In this section, we will review some of the most important legal issues that new teachers should be aware of.

Privacy

Teachers have a duty to protect the privacy of their students. According to the **Family Educational Rights and Privacy Act (FERPA)**, teachers must obtain consent from parents or guardians before disclosing any personally identifiable information about students (U.S. Department of Education, n.d.). Teachers should also be aware of their school or district's policies related to the collection, use, and disclosure of personal information.

In addition to federal privacy laws, many states have enacted their own laws related to student data privacy. For example, the **Kansas Student Data Privacy Act (KSDPA**) sets forth requirements for the collection, use, and storage of student data by educational institutions in the state of Kansas. The KSDPA requires that educational institutions have written policies related to student data privacy, obtain written consent from parents or guardians before disclosing certain types of student data, and implement security measures to protect student data (Kansas Legislature, n.d.). Teachers should note that the KSDPA applies to surveys administered to students by school district employees.

Mandated Reporting

Teachers are **mandatory reporters** of suspected child abuse or neglect. According to the Child Welfare Information Gateway, all states have laws requiring certain professionals, including teachers, to report suspected abuse or neglect (Child Welfare Information Gateway, 2016). Teachers should be aware of their legal obligations to report suspected abuse or neglect and follow the procedures outlined by their school or district. If a teacher witnesses the suspected abuse or neglect, simply reporting to an administrator is not sufficient. The teacher must ensure the report is made by calling the hotline and reporting what they observed themselves.

Freedom of Speech

While teachers have a First Amendment right to **freedom of speech**, this right may be limited in certain situations. Teachers' speech is protected when it addresses matters of public concern and is not disruptive to the educational environment. However, teachers' speech may be limited when it interferes with their job responsibilities or with the educational mission of the school (First Amendment Encyclopedia, n.d.).

Search and Seizure

While in most cases administrators or school resource officers will handle student searches, it is important for new educators to understand that students have the right to privacy in their personal property, such as their phones or electronic devices. In general, school officials are not allowed to search a student's electronic device without a warrant or probable cause. However, schools may have policies that allow them to search a student's device in certain situations, such as when there is a suspicion of cyberbullying or other inappropriate behavior (Kids Legal, n.d.).

Copyright

As educators, it's essential to understand copyright law and how it applies to the materials used in the classroom. **Copyright** protects the creators of original works, such as books, videos, and images, from unauthorized use, reproduction, and distribution (Stanford Copyright and Fair Use Center, n.d.).

New teachers should be aware that the **Fair Use Doctrine** allows for the limited use of copyrighted materials in certain circumstances, such as for criticism, comment, news reporting, teaching, scholarship, or research. The four factors of fair use are the purpose and character of the use, the nature of the copyrighted work, the amount and substantiality of the portion used in relation to the copyrighted work as a whole, and the effect of the use upon the potential market for or value of the copyrighted work (U.S. Copyright Office, n.d.).

It's important for new teachers to use materials that are either in the public domain or have been licensed for educational use. **Public domain** materials include works that are no longer protected by copyright or that have been released by the copyright owner into the public domain. Some educational materials are licensed through Creative

Commons, which allows for the free use and distribution of the work under certain conditions (Creative Commons, n.d.).

Liability

Teachers have a duty of care towards their students and may be held liable if they breach this duty. According to the NEA, potential sources of **liability** for teachers include negligence, breach of confidentiality, and breach of duty of care. To avoid liability, teachers should ensure that they are providing a safe learning environment and following proper procedures for reporting suspected child abuse or neglect. (Edvocate, n.d.)

Additional Resources

One good website for new teachers to consult regarding legal issues is the website of the **National Education Association (NEA**). The NEA provides resources and information on a wide range of legal issues that teachers may encounter, including classroom management, student privacy, and employment contracts. Additionally, the NEA offers legal assistance to its members on a variety of issues, including employment disputes and certification/licensure concerns. The NEA provides a resource library with legal and employment guidance.

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Bret Church

Professional Involvement

From Professional Development to Professional Associations

Bret Church

Professional Development

Professional development is an essential part of a teacher's career that helps them improve their knowledge, skills, and effectiveness in the classroom. It provides opportunities for new teachers to learn and grow and stay current with the latest teaching strategies and best practices.

Professional development is critical not just for new teachers, but for all teachers throughout their careers. Teaching is a constantly evolving profession, and new teaching strategies, instructional technology, and research are continually emerging. As such, it is essential for teachers to continue learning and growing throughout their careers. Being a life-long learner is a key component of being an effective teacher, and professional development opportunities can help teachers stay up to date with the latest teaching practices and trends.

Professional development opportunities can help teachers build their skills in specific areas, such as classroom management, instructional technology, and subject matter expertise. Professional development can also provide opportunities for teachers to collaborate with other educators, learn about the latest research and best practices in education, and pursue advanced degrees or certifications (University of San Diego, n.d.).

Types of Professional Development

The following are some common types of professional development that new teachers may encounter:

Figure 1

Types of Professional Development

- Professional Development Days
  - **Professional development days** are days set aside by schools or districts for teachers to engage in professional learning activities, such as workshops, training sessions, and seminars. These days are designed to help teachers learn new skills and strategies, and to stay up to date on the latest trends and research in education (Darling-Hammond, Hyler, & Gardner, 2017).
- Collaboration
  - **Collaboration** is an effective way for teachers to learn from one another and improve their practice. Teachers can collaborate with their colleagues within their own school or district, or they can collaborate with teachers from other schools and districts. Collaboration can take many forms, including lesson study, peer observation, and co-teaching (Vescio, Ross, & Adams, 2008).
- Professional Learning Communities (PLCs)
  - A **PLC** is a group of teachers who come together regularly to share knowledge and resources, reflect on their practice, and work together to improve student learning. PLCs provide a supportive environment where teachers can collaborate and learn from each other (DuFour, DuFour, Eaker, & Many, 2010).
- Instructional Coaching
  - **Instructional coaching** is a one-on-one professional development approach where an experienced teacher provides guidance and support to a new teacher. The coach observes the new teacher's classroom practice and provides feedback and suggestions for improvement. Instructional coaching can be a powerful way for new teachers to learn and grow (Knight, 2007).
- Peer Coaching
  - **Peer coaching** is similar to instructional coaching, but it involves two teachers who provide feedback and support to each other. Peer coaching can be a valuable form of professional development because it allows teachers to learn from their colleagues and build a supportive professional network (Joyce & Showers, 2002).

Professional Associations

Joining a professional association can be a valuable resource for new teachers. Professional associations provide a community of support, access to resources and information, and opportunities for networking and professional development. Professional development is essential for new teachers to build their skills, stay up-to-date with the latest teaching strategies, and improve their effectiveness in the classroom.

Professional associations offer a variety of resources for new teachers. Many associations provide access to online libraries of resources, research studies, and best practices. These resources can help new teachers develop their teaching strategies and classroom management skills. Professional associations also offer opportunities for

networking with other teachers in the same subject area or grade level. This can be particularly valuable for new teachers, as they can learn from the experiences of other educators and get advice on how to navigate the challenges of the profession.

In addition, some professional associations offer liability insurance to their members. Liability insurance can protect teachers from legal liability in the event of a lawsuit. For example, if a student is injured in a teacher's classroom or on a school-sponsored trip, liability insurance can help cover the costs of any legal claims or damages. While liability insurance is not required for teachers, it can provide an extra layer of protection and peace of mind.

List of Professional Associations

The following is a list of professional associations including content specific professional associations:

- American Alliance for Theatre and Education (AATE): https://www.aate.com/
- American Association of Middle-Level Education (AMLE): https://www.amle.org/
- American Association of Physics Teachers (AAPT): https://www.aapt.org/
- American Council on the Teaching of Foreign Languages (ACTFL): https://www.actfl.org/about-actfl
- Association for Career and Technical Education (ACTE): https://www.acteonline.org/
- Music Teachers National Association (MTNA): https://www.mtna.org/
- National Art Education Association (NAEA): https://www.arteducators.org/
- National Association of Biology Teachers (NABT): https://nabt.org/
- National Association of Geoscience Teachers (NAGT): https://nagt.org/index.html
- National Association of Teachers of Singing (NATS): https://www.nats.org/
- National Council for the Social Studies (NCSS): https://www.socialstudies.org/
- National Council of Teachers of English (NCTE): https://ncte.org/
- National Council of Teachers of Mathematics (NCTM): https://www.nctm.org/
- National Educators Association (NEA): https://www.nea.org/
- National Science Teachers Association (NSTA): https://www.nsta.org/
- National Speech and Debate Association: https://www.speechanddebate.org/
- Society of Health and Physical Educators (SHAPE): https://www.shapeamerica.org/

**Many of the national organizations will also have state affiliates.*

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Classroom-Based Research

Neal Luo

Strong Model of Teacher Professionalism

Qualified teachers are professionals who demonstrate their specialist knowledge, skills, attitudes, and behaviors in teaching practice, contributing to their effectiveness as educators and to the overall quality of education. An effective teacher consistently makes swift decisions based on professional expertise and judgment within the constantly changing dynamics of classroom learning. Taber (2013) proposed the weak and strong models of teacher professionalism. The **weak model** is characterized by a technical view of teaching, where teachers mainly apply the research-based standardized methods and procedures and follow best practice without exploring the implications of what that could entail. As schools, students, and classrooms are complex entities, they require the **strong model** of teacher professionalism that is characterized by a reflective approach to teaching. In this model, teachers are expected to actively evaluate their teaching and seek to improve it based on solid evidence.

The strong model of teacher professionalism promotes more responsibility and autonomy for the individual teacher, particularly in making decisions about how to teach. Decisions related to teaching can be validated by both theoretical and practical justifications, through the application of knowledge derived from published research, as well as the examination of evidence gathered in the classroom. Therefore, classroom research, especially small-scale practitioner inquiry, is an integral component of a teaching professional's work (Taber, 2013). This holds particular significance with the increasing emphasis in schools on continuous improvement, data-driven decision making, and evidence-based practice. In a more complex and dynamic view of teaching profession, teachers are required to be able to exhibit research-informed practices by utilizing and conducting classroom-based research.

What is Classroom-Based Research?

Classroom-based research refers to any form of research that is conducted by teachers, either independently or in partnership with peers and other researchers, within their own classrooms. It is a systematic and rigorous process of inquiry with the intention of improving the effectiveness of their teaching, enhancing student learning outcomes, developing their own practice, and contributing to the knowledge base of teaching and learning (Taber, 2013). The essential goal of conducting classroom-based research is to produce evidence-based findings that can enhance teaching practices and improve student learning outcomes by investigating and exploring the practices, procedures, and outcomes of classroom teaching.

Classroom-based research is often distinguished from other educational research by its emphasis on the practical, day-to-day realities of teaching and learning, instead of relying on theories or models that may not be relevant to specific contexts. This approach empowers teachers to examine their own teaching practices and their students' learning experiences in a more purposeful and tailored manner, enabling them to identify areas for improvement and make informed decisions about their teaching. Classroom-based research usually centers around addressing specific classroom challenges or exploring innovative teaching methods that may be more effective for students.

Significance of Classroom-Based Research for Teachers

The values of any educational research should be evaluated based on its potential to enhance teaching and improve student outcomes. Classroom-based research offering distinct advantages that teachers conduct or are involved in their classroom research has its unique significance and benefits. These benefits extend to the school practitioner leading the study, their students, the school and district, and the broader field of educational research (McMillan, 2022).

Classroom-based research benefits teachers and other school personnel in increasing their effectiveness in achieving desired student outcomes, whether academic, behavioral, or social (McMillan, 2022). Conducting classroom-based research allows teachers to gain a better understanding of their students' learning needs, identify effective teaching practices, and adjust their instruction, accordingly, leading to improved student outcomes. For instance, by engaging in research that is grounded in their own experiences and contexts, teachers can develop more effective instructional practices that are better aligned with the needs and strengths of their students. Classroom-based research also plays a crucial role in the professional development of teachers as it promotes a culture of learning and reflection, allowing for opportunities in professionalism and leadership (Pine, 2009).

Classroom-based research empowers teachers to drive change within their own classrooms and schools. Through collaborative work and identification of areas for improvement, teachers can implement new strategies to create a culture of collaboration and continuous improvement and a more effective learning environment for their students. In addition, classroom-based research helps to bridge the gap between research and practice by contributing to the growing body of knowledge on effective teaching practices and informing the wider education community.

Example of Using Classroom-Based Research to Inform Teachers' Practice

Classroom-based research as teacher-driven, context-driven, and data-driven activities provide valuable insights that inform and enhance teachers' practice. A good example is the investigation on how project-based learning (PBL) helped students prepare for a high-stakes standardized Algebra exam. The classroom-based research was conducted by a teacher-researcher (Betzig, 2021) in an urban high school with 67 Algebra students. After one semester of using the PBL approach, the percentage of students who passed the exam increased by 26% and the percentage of students earning a college readiness score increased by 17%.

The classroom-based research on PBL also provides practical insights into how teachers can effectively implement this pedagogical methodology while preparing students for high-stakes standardized tests, identifying three key components that contributed to the successful implementation of project-based learning in an Algebra classroom: developing conceptual understanding through real-world connections, developing rigorous math skills, and exposure to exam-style problems. By focusing on these components, teachers can engage their students, build their resilience, and improve their content knowledge, ultimately leading to better exam performance and college/career readiness. This classroom-based research also contributes to the extended community of educators by highlighting the potential of project-based learning to improve student outcomes and offering practical guidance for teachers looking to implement this methodology in their own classrooms (Betzig, 2021).

Types of Research Classroom Teachers Commonly Conduct

Classroom teachers can engage in a variety of research activities to improve their instructional practices and student outcomes. Below are the types of research that are commonly conducted by classroom teachers.

Experiment

Experimental designs with the purpose of testing or determining cause-and-effect relationships in classroom-based research can be categorized into two types: true experiments and quasi-experiments. When conducting a **true**

experiment, it is essential to have an experimental group and a control or comparison group. Students must be randomly assigned to these groups, and the **intervention** such as an innovative teaching strategy or a teaching program should be randomly assigned to the groups. The intervention should be implemented under identical environmental conditions. There needs to be a posttest on the outcome variable while a pretest is optional depending on the specific situation. Extraneous or confound variables that can possibly affect the outcome variable should be well controlled. **Quasi-experimental research** is typically used in classroom research settings where it is difficult or impossible to randomly assign students to the experimental and the control or comparison groups. There needs to be a pretest before the intervention and a posttest after on the outcome variable in addition to well controlling the other factors that impact the outcome variable. Due to the delicate nature of the process, it is recommended that teachers consult or collaborate with experienced researchers who have expertise and skills in conducting experiments.

For example, to conduct an experiment to investigate the effect of integrating gamification in teaching biology on students' engagement and learning outcomes, a teacher researcher can follow these steps: 1) Randomly select 40-60 students and randomly assign them into two classes (true experiment) or select two comparable classes of students, with similar demographics and academic levels on biology (quasi-experiment); 2) Randomly assign one class to be the experimental group which will receive biology lessons with gamification techniques incorporated, and the other class to be the control group, which will receive traditional biology lessons; 3) Conduct a pre-test to assess the students' baseline knowledge and engagement levels in biology; 4) Introduce the gamification techniques to the experimental group during the biology lessons, such as using game-based simulations, rewards, or leaderboards; 5) Use the same biology curriculum for both groups, and ensure that the lessons are taught in the same environment, for instance, in terms of class time, classroom lighting, seating arrangements, and classroom resources, and also by the same teacher; 6) Control for the other extraneous factors if possible that may affect the students' engagement and learning outcomes such as students interest in biology and family or personal emergency during the experimental period; 7) Conduct post-tests to assess the students' learning outcomes and engagement levels in biology; 8) Analyze the data using appropriate statistical methods to determine if there is a significant difference in the learning outcomes and engagement levels between the two groups.

Comparative Research

Comparative research comparing and contrasting the existing data between two or more groups of different features without manipulating them can be more feasibly and even effectively used in classroom research by teachers. For instance, a classroom teacher-researcher can use the existing assessment data between two classes of different features or being taught differently. They can also collect and compare outcome data longitudinally by using two comparable classes of students, such as comparing the current academic year's data to the previous year's data. Although the potential different results do not have the capacity to draw a cause-and-effect relationships between the interventions and outcomes, they can still nicely inform teachers in teaching practice.

Survey

Surveys are a common method of data collection in classroom-based research. Teachers can use **surveys** to gather information about students' attitudes, beliefs, and experiences, as well as their own teaching practices. When using surveys for classroom research, it is important for teachers to consider the credibility of the survey by ensuring it is reliable and valid for their specific phenomenon and research question. Novice teacher researchers are suggested to use validated existing surveys that have been tested for reliability and validity in similar research contexts. Surveys are also commonly used as instruments to collect data for both experiments and comparative research.

Case Study

Case studies are in-depth investigations of a single real-life event, group, or individual through holistic and detailed observations, interviews, and document analysis. Classroom teachers can conduct case studies to explore specific issues related to teaching and learning, such as the impact of a particular instructional strategy or the experiences of a group of students.

Ethnography

Ethnography is a research approach that involves a detailed examination and interpretation of cultural patterns and meanings within a classroom or school environment through prolonged observations or natural fieldwork. The aim is to understand the classroom sociocultural context and interpersonal processes that shape these patterns. For example, a classroom teacher can engage in systematically observing and recording student behavior and classroom interactions followed by synthesizing and seeking their patterns. Such patterns can provide insights into student learning behaviors, styles, strategies, preferences, habits, and help teachers to identify areas for adjustment or improvement in their instructional practices.

Phenomenology

Phenomenology aims to describe and interpret students' classroom learning experiences to understand their essence as perceived and described by students and/or teachers, which leads to a deeper understanding of common meanings or thematic patterns. For example, a classroom teacher can select a group of 7-10 students who have clearly "lived" the experience and are able to "think loud" their perceptions and feelings (McMillan, 2022) for interviews about classroom phenomenon, for instance, placing students with disabilities in inclusive classrooms. Using thematic analysis of coding, analyzing, and organizing on the interview data, the teacher can understand students' patterned perspectives and challenges in participating in inclusive classroom activities and interactions. This approach can provide useful information for teachers to develop effective strategies to support the learning and social inclusion of students with disabilities.

Grounded Theory

A group of inquisitive classroom researchers (Johnston et al., 2023) wondered how high expectations from teachers were experienced by students in high schools. They involved 25 tenth grade students in three public schools for data collection through classroom observations and interviews, asking questions like "What did your teachers say or do today that communicate their expectations for your academic achievement?", "What did you do in response to your teachers' expectations?" and "What are the consequences for their achievement?". After coding and analyzing the various observation and interview data collected from the students, they sought for the patterns and looked for the causal relationship between the thematic variables. A new theory rooted in the students' data was generated to explain how teachers communicate their high expectations to the students that leads to improved academic outcomes: (1) showing confidence in students through encouraging, challenging, and expressing pride, (2) applying effective teaching approaches such as active learning, teaching for understanding, and allowing students' choice and self-direction, (3) developing positive relationships, and (4) establishing a learning environment that meets students' basic social needs. The findings provide classroom teachers with student-focused perspectives on how to convey high expectations (Johnston et al.).

Grounded theory, originally developed by Glaser and Strauss (1967), aims to generate theory that is grounded in data, and it is increasingly used in educational research (Stough & Lee, 2021). It can be an ideal and viable approach for a teacher to address a major and long-term issue in their professional context (Taber, 2013). In the classroom, it is common for teachers to address not only the "how" questions, but also the "why" questions by presenting causal explanations using refining and verifying procedures to validate their theories.

Action Research

Action research methodology is a good fit with classroom-based research that should focus not only on what it is but also what can be (Avci, 2021; Skovsmose & Borba 2004). From the classroom-based research perspective, action research is a common and practical type of rigorously methodical investigation by teachers, school administrators and other stakeholders to inquire about the challenges, problems, and innovative practices in the classroom followed by taking actions informed and guided by the inquiry. It often involves a cyclical or spiral process of planning, action, monitoring, and reflection that is sustained, recursive and dynamics (Pine, 2009). This process allows teachers to actively observe, plan, identify problem and implement new strategies in their classrooms, while closely examining their

impact on student learning. With the reflection on their research, teachers develop new knowledge, which leads to identification of new areas for improvement, and new cycles of inquiry.

Action research is also often characterized by a participatory and collaborative process that involves collecting or utilizing multiple or triangulated sources of data to establish credibility. The types of classroom research discussed in the previous parts can be used or designed in an integrative way for teachers to conduct action research followed by implementing research-based actions.

Using the framework of the **four-step process** (Forster & Eperjesi, 2021; Mills, 2014) and the **spiral process** (Pine, 2009), the specific steps can be illustrated as follows using a classroom action research example that focuses on improving student engagement and achievement in mathematics:

1. Identify an area of focus.
    - The problem noticed by a mathematics teacher is that some students in their Grade 7 class were disengaged and having difficulty comprehending essential concepts.
2. Collect data.
    - A pre-assessment was administered to pinpoint the difficulties encountered by the students while their learning behaviors were observed, and student interviews including a survey about attitudes toward math and their in-depth perceptions on learning were conducted.
3. Analyze and interpret data.
    - By analyzing and integrating the data, the teacher found that students' struggling areas were focused on algebraic equations and understanding proportional relationships, and there were also negative perceptions of the subject among peers or even some parents.
4. Develop and implement an action plan.
    - The teacher developed and implemented a plan of action that involved using collaborative learning, scaffolded instruction, adopting interesting real-world examples, and incorporating more group work.
5. Monitor progress and evaluate results.
    - The teacher monitored the student progress by documenting and analyzing the formative data throughout the classroom action implementation and conducted a post-assessment to measure improvement. In addition, they gathered feedback from students regarding the efficacy of the interventions.
6. Reflect on and spiralize the process.
    - The teacher revisited and reflected on the process and identified further areas for improvement, gradually increased the complexity of problems or tasks related to the identified teaching content, and deepened students' understanding and mastery of the learning material.

Summary of Key Points

1. The strong model of teacher professionalism emphasizes individual teacher responsibility and autonomy, making decisions based on both theoretical and practical justifications including classroom-based research.
2. Classroom-based research is a systematic process of inquiry conducted by teachers in their own classrooms, with the aim of enhancing teaching effectiveness, improving student outcomes, developing innovative practice, and advancing the knowledge of education.
3. Classroom-based research empowers teachers to improve student outcomes by gaining a better understanding of their students' learning needs, identifying effective teaching practices, and implementing new strategies.
4. Classroom-based research benefits schools in creating a culture of collaboration and continuous improvement, while contributing to evidence-based policies and practices in the wider education community.
5. Classroom-based research as teacher-driven, context-driven, and data-driven activities provide valuable insights that inform and enhance teachers' practice.
6. Teachers can conduct or engage in a variety of classroom-based research activities including experiment, comparative research, survey, case study, ethnography, phenomenology, grounded theory, and action research.
7. Classroom action research is a practical and systematic investigation by teachers, administrators, and stakeholders through cyclical or spiral processes of inquiry and action.
8. The typical steps for classroom action research include identifying an area of focus, collecting data, analyzing/interpreting data, developing/implementing an action plan, evaluating the results, and reflecting on/spiralizing the process.

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Future Editions

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The first edition of this manuscript was developed over the 2023 spring and summer terms for immediate use in the fall 2023 semester. It was intended for use with Emporia State Unviersity "Phase I" secondary education candidates in the course *ED 333: Principles of Secondary Education* during their pre-student teaching semester. During this semester, candidates concurrently take classes on Classroom Management and Educational Psychology. Additionally, separate professional education courses are required for candidates that provide more detailed information on many of the topics reciving a cursory overview here (i.e., Introduction to Teaching, Assessment and Data in the Secondary Classroom, Instructional Technolgy for the Secondary Educator, Integrating Literacy Strategies Across the Secondary Contents, various disciplinary methods courses, etc.). Therefore, this text--perhaps more than others--is not meant to be an all-encompasing resource for secondary educators but rather focuses on the topics that are most beneficial for review as candidates in the target program engage in internships and approach their student teaching placement.

However, future editions of this text would be enhanced by including chapters on:

- Classroom Management
- Educational Psychology
- Interdisciplinary Instruction
- Brain Compatible Teaching
- Reflective Practices
- Obtaining a Teaching Position
- Education Roles Beyond the Classroom
- Global Education Community

If you have suggestions about topics you'd like to see included, or are interested in authoring a future chapter, you may reach the editor at: adlickteig@gmail.com.

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