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Distracted, Bored, And Disengaged: How To Reengage Gen Z Learners In The Secondary School Classroom

Sharon Kay Stout

DISTRACTED, BORED, AND DISENGAGED: HOW TO REENGAGE GEN Z LEARNERS IN THE SECONDARY SCHOOL CLASSROOM

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This dissertation, submitted by Sharon Kay Stout in partial fulfillment of the requirements for the Degree of Doctor of Education from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

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PERMISSION

Title	Distracted, Bored, and Disengaged: How to Reengage Gen Z Learners in the Secondary School Classroom
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Sharon Kay Stout
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Abstract

With a plethora of digital tools at their disposal and knowledge at their fingertips, Generation Z students must be engaged in ways that differ from previous generations of students. Using Ryan and Deci's (2000, 2020) self-determination theory and the Student Engagement Core model proposed by Bundick et al. (2014), this qualitative research study used semi-structured interviews and focus groups to research the best ways to engage Gen Z students in a classroom setting. Data was coded using thematic analysis (Braun & Clarke, 2006), with the self-determination theory's three tenets, relatedness, autonomy, and competence, serving as the initial coding framework. Results showed that there are four essential aspects to creating an engaging classroom climate: building relationships, promoting student autonomy, creating a sense of mastery, and engaging students in work that has a practical purpose. Further discussion includes the role of technology in the classroom and the continued need for an awareness of generational differences in students throughout teachers' careers.

Artifact I

Introduction to the Problem of Practice

The 21st century student learns in a vastly different way from students in earlier times. Currently populating high school classrooms is Generation Z, born between 1995 and 2010 (Seemiller & Grace, 2019). In contrast to the generations of students who preceded them, Gen Z's "characteristics, interests, styles, and preferred learning environments are in many ways different from their predecessors" (Seemiller & Grace, 2016, p.107).

This is a generation defined by technology unlike any previous generation. As Madden (2019) notes, technology has "become core to their learning" (p.2). Such "technological immersion" has created shorter attention spans and the need for multiple forms of stimulation for them to engage in learning (Madden, 2019, p.2). In his book, *Distracted*, Lang (2020) connects students' reliance on digital devices to their potential for distraction: "Thanks to the speed with which they [digital devices] dispense novel information to us, today's digital devices are highly potent tools for distraction" (p.15). McCoy (2020) found that students who were distracted by technology spent 19% of their class time using digital devices for non-academic purposes, with 87% of students admitting that they were not focused and 80% noting that they missed instruction during class.

In addition to their vastly different learning styles and high potential for distraction, 21st century students exhibit high levels of disengagement. According to Holquist et al. (2020), America's students are "chronically disengaged" (p.1). Disengaged students put forth little effort, describe themselves as bored, and are inattentive; additionally, they tend to have more discipline problems and are at higher risk of dropping out of school (Holquist et al., 2020). A 2015 Gallup Student Poll finds that student engagement levels decrease every year from fifth grade (75%) through eleventh grade (32%), with students in twelfth grade experiencing a meager increase of

2% (as cited in Brenneman, 2016). A fifth of students are "actively disengaged" (Brenneman, 2016, para. 2), and approximately 10 percent of students are "both disengaged and discouraged" (Brenneman, 2016, para. 2).

In addition to being disengaged, students are bored. Barbalet (1999) defines boredom as "a feeling of not being involved in or engaged by events or activities" (p.634). Boredom and disengagement are inextricably linked. As Feegrade (2017) states, "From a learning perspective, engagement and boredom are mutually exclusive terms – students will not be bored if they are engaged in their learning" (para. 2).

According to Furlong et al. (2021), boredom rates, like disengagement rates, rise as students progress through school, noting that more than 90% of students are bored at school. According to Yazzie-Mintz (2007), two out of every three high school students are bored every day, with 17% bored in every class. Even more troubling is that only 2% of high school students report never experiencing boredom in high school (Yazzie-Mintz, 2007). The Quaglia Institute for Aspirations (2013) also reports increasing levels of boredom, finding that 32% of sixth graders are bored in school. By tenth grade, that number has increased to 50% . Their report concludes by stating that "school is increasingly perceived as less relevant the longer a student is in school" (The Quaglia Institute for Aspirations, 2013, p.14).

The cost of disengagement is high. As Skinner and Pitzer (2012) state, "the downward spirals of student and teacher engagement, the draining away of students' intrinsic motivation, and the rates of student dropout and teacher burnout, are all reminders of the costs associated with the current situation" (p.37). Conversely, students who are engaged perform at a higher academic level and show increased persistence in school (Fredricks et al., 2004).

Research surrounding student engagement has largely described engagement from "a surface-level perspective" (Bundick et al., 2014). At the same time, Furlong et al. (2003) confirm that "classrooms and the manner in which they function are at the core of student's [sic] academic engagement" (p.106). Bundick et al. (2014) propose studying the "classroom ecology," which consists of student, teacher, and content, and how those elements interact to engage students.

Meanwhile, testing demands placed on public schools by the No Child Left Behind Act of 2002 have reduced many disciplines to a set of skills to be taught and tested (Markowitz, 2018). Reading teachers in the elementary grades focus their instruction on the skills that their students need to perform well on standardized tests, with students spending nearly a quarter of the year getting ready for such tests (Wexler, 2019). Wexler (2019) concludes that "many American students lack basic knowledge about the world" (p. 9). Though NCLB may have improved student achievement, it has had a negative impact on students' feelings toward school (Markowitz, 2018). Mora (2011) notes that "high-stakes testing has altered instruction such that in many classrooms more time is spent on test preparation at the expense of engaging and varied learning activities" (para. 4). Wexler (2019) ponders changing teaching in a way that inspires students to enjoy learning: "But what if it's possible to provide all students, including the neediest, with the kind of education that enables them to enjoy learning, understand and retain what they need, become responsible citizens - and even increase test scores?" (pp. 22-23).

In her book, *The Knowledge Gap* (2019), Wexler observes that students' knowledge about the world is insufficient. To provide students with a rich knowledge base, she proposes a content-focused curriculum, as opposed to a skill-based one, that will naturally produce higher

standardized test scores. In her view, students can enjoy learning and score better on standardized tests if they are exposed to a relevant, interesting curriculum.

Additionally, the focus on standardized testing created by the No Child Left Behind act has reduced the number of programs for gifted students, leaving them unchallenged and bored in school. "No Child Left Behind has brought higher standards and more accountability into classrooms, but it's also thinned and narrowed the curriculum" (Cleaver, 2008, p. 30). Districts have had to make curricular changes to accommodate standardized testing. As a result, test scores have stagnated, with only a small number of students surpassing the standards on these tests (Cleaver, 2008). Furthermore, 70% of high-ability students are underachievers (Cleaver, 2008).

Traditional teaching methods, such as lectures, do not engage this generation of technology-savvy students (Rothman, 2016; Seemiller & Grace, 2016; Nicholas, 2020). Engaging students requires that teachers reimagine their teaching methods in ways that promote the active involvement of students and create a dialog between students and teachers; in other words, teaching must become increasingly two-way for students to maintain interest (Hattie, 2012).

Chronic boredom leads to what Ryan and Deci (2020) term amotivation, which they define as the lack of relevance, value, or competence to complete a task: "Amotivation, all too common in classroom settings, can result either from lack of felt competence to perform, or lack of value or interest. Amotivation has been a strong negative predictor of engagement, learning, and wellness" (p.3). Cheon and Reeve (2015) continue, "Student amotivation is a state of motivational apathy in which students harbor little or no reason to engage in classroom learning activities; it is a motivational deficit that is strongly associated with maladaptive functioning"

(p.99). According to Corso et al. (2013), amotivated and chronically disengaged students are at higher risk of negative outcomes such as dropping out of school. Students who drop out of high school experience higher levels of unemployment, lower quality of life, and lower self-esteem. They are also more likely to become involved in risky behaviors, such as sexual promiscuity, substance abuse, and criminal behavior (Corso et al., 2013).

Definition of Engagement

Engagement is a complex term. In its most general sense, engagement encompasses how strongly students identify with school as well as how much they value school, all of which lead students to feel as if they belong at school (Willms, 2003; Willms et al., 2009). Students' school behaviors reflect the desire to be a part of the school environment, leading students to participate in class and attend school regularly (Harbour et al., 2015).

The term engagement can be broken down further into types of engagement. Fredricks et al. (2004) identify the categories of engagement as behavioral, emotional, and cognitive. The behaviors and actions of students at school, along with their participation in school and classroom activities, define behavioral engagement. The affective aspects of school, such as relationships with teachers, classmates, and the school itself, and the impact those relationships have on how connected students feel to the school constitute emotional engagement. Cognitive engagement refers to students' involvement in the academic life of the school, including their own effort, their investment in their learning, and their ability to engage in complex learning and comprehension activities in school. (Fredricks et al., 2004; Harbour et al., 2015; Ladd & Dinella, 2009).

Fredricks et al. (2004) advocate for the study of all three components under the single concept of engagement, noting that "these factors are dynamically interrelated within the

individual; they are not isolated processes" (p.61). Engagement is "malleable" and thus should be used "to design more specifically targeted and nuanced interventions" (Fredricks et al., 2004, p.61).

Willms et al. (2009) offer this definition of student engagement:

> The extent to which students identify with and value schooling outcomes, have a sense of belonging at school, participate in academic and non-academic activities, strive to meet the formal requirements of schooling, and make a serious personal investment in learning (p.7).

They also divide the concept of engagement into three dimensions: social, academic, and intellectual. Social engagement refers to students' feelings of belonging at school and their participation in the broader life of the school. When students are participating in learning activities, they are academically engaged. The final aspect, intellectual engagement, is defined as "a serious emotional and cognitive investment in learning, using higher-order thinking skills (such as analysis and evaluation) to increase understanding, solve complex problems, or construct new knowledge" (Willms et al., 2009, p.7).

Reeve and Tseng (2011) propose the addition of agency as the fourth dimension of student engagement, which they define as "students' constructive contribution into the flow of the instruction they receive" (p. 258). Students act as agents of their own learning when they share their preferences with their teacher, ask questions, make recommendations to the teacher, seek resources, solicit help, communicate their needs, attempt to personalize their learning, and share their interest in the course material (Reeve & Tseng, 2011). In summary, "students not only react to the learning activities, but they also act on them – modifying them, enriching them, and even creating or requesting them in the first place" (Reeve & Tseng, 2011, p. 258).

While they use different terminology to describe the various dimensions of student engagement, students' behavior, attitude toward learning, investment in their education, sense of belonging at school, participation in academic and extracurricular activities, and their relationships with their peers and school staff are essential aspects of student engagement (Fredricks et al., 2004; Willms et al., 2009). Engagement is viewed holistically, with each dimension affecting students' overall engagement in their own education.

In contrast, disengagement occurs when students feel disconnected from school. It "is used to characterise [sic] students who do not feel they belong at school and have withdrawn from school activities in a significant way" (Willms et al., 2003, p.8). When students are disengaged, intrinsic motivation is low and student dropout and teacher burnout rates are high (Skinner & Pitzer, 2012). Citing research by Connell et al. (2009) and Deci (2009), they conclude, "Self-determination theory and the motivational model it inspires offer an alternative vision" (Skinner & Pitzer, 2012, p.37).

Statement of Purpose

Every era in education has its challenges. Gen Z is no exception. The proliferation of personal devices simultaneously provides students with instant access to information while also distracting them from learning it. The era of high stakes standardized testing has left learning defined by specific skills needed to pass tests, not by intrinsically interesting and relevant knowledge. Madden (2019) notes, "There is still often a significant disconnect between how we are teaching this generation, and how they are learning" (p. 238). Educators must explore new ways to engage Gen Z students, or they will remain disengaged, bored, and distracted.

The purpose of this study is to identify teacher behaviors and instructional practices that increase student engagement and motivation and reduce boredom and disengagement at the

secondary level. This qualitative study explores optimal ways for teachers to engage students through their interactions with them in the classroom and through teaching strategies that meet the needs and learning styles of Gen Z within the context of *self-determination theory*. This study also explores how teachers' actions impact students' feelings of autonomy, competence, and relatedness. The goal is to identify the most effective ways to engage Gen Z students in deep, relevant learning.

Research Questions

This study explored the following questions:

1) What teacher behaviors and instructional practices decrease boredom and distraction in class and increase engagement among Gen Z secondary students?

2) How can technology be used to enhance engagement without increasing distraction among Gen Z students?

Literature Review

Pink, in his book *Drive* (2009), proposes Motivation 3.0, a theory of motivation that is based on what he calls Type I behavior, which "is fueled more by intrinsic desires than extrinsic ones. It concerns itself less with the external rewards to which an activity leads and more with the inherent satisfaction of the activity itself" (p.75). At the core of Pink's work is the idea that motivation and Type I behavior stem from three elements: autonomy, mastery, and purpose. Autonomy means that work that is self-directed, mastery focuses on improvement and strives for excellence, and purpose is "doing something that matters, doing it well, and doing it in the service of a cause larger than ourselves" (Pink, 2009, p. 145).

However, schools are structured in ways that work against the innate motivational forces described by Pink (2009):

> There's a mismatch between what science knows and what schools do. Yet in the face of this evidence, too many schools are moving in the wrong direction. They're redoubling their emphasis on routines, right answers, and standardization. We're bribing students into compliance instead of challenging them into engagement (p.185).

Kohn (1993) proposes the "three Cs of motivation": collaboration, content, and choice (p.187). First, he applies the three Cs to the workplace. When workers collaborate on tasks, particularly those that are challenging and complex, they do a better job. They are more excited about the work, they exchange ideas and talent, and they receive emotional support from their colleagues. Additionally, when workers sense that they are working within a larger community, their enhanced sense of belonging make them more excited about the work they are doing. The sense of community that people feel in the workplace is analogous to how students experience community in the classroom.

Kohn (1993) also emphasizes the importance of the content of the task. People want their work to matter, to be meaningful, and to feel worthwhile: "Motivation is typically highest when the job offers an opportunity to learn new skills, to experience some variation in tasks, and to acquire and demonstrate competence" (pp. 188-189). Content is an equally important motivator in the classroom.

Finally, people are much more motivated when they have some level of choice in the task. As Kohn (1993) states,

> People are most motivated when they are able to participate in making decisions about organizational goals. Even when those goals are determined by others, it is critical that employees be able to decide how best to reach them, that they hear from a supervisor, 'Here's where we need to get; you decide how we get there' (p.193).

Kohn (1993) applies these same three Cs to classroom learning to get students "hooked on learning" (p.198). Instead of competing against their classmates or performing solitary tasks, the use of cooperative (collaborative) learning in the classroom increases students' motivation to learn. When students work in pairs or small groups, they feel more positively about themselves, their classmates, and what they are studying. Kohn (1993) concludes, "The opportunity to collaborate ought to be the default condition in the classroom" (p.215).

Kohn's book, *Punished By Rewards* (1993), foreshadows Natalie Wexler's book, *The Knowledge Gap* (2019), by supporting an interesting and challenging curriculum that naturally motivates students without abandoning basic skills. Kohn (1993) states, "It means that these [basic] skills are nestled in real-life concerns" (p. 218). Content should not be taught as a series of skills to be mastered; instead, learning should connect to the real world that students live in (Kohn, 1993).

In his discussion of curricular content, Kohn (1993) addresses intrinsic motivation. He believes that students' motivation is higher when they are not performing the same task. Kohn (1993) notes that when students have both an appropriate level of challenge and a variety of assignments, they will have "a sense of accomplishment. That feeling of having worked at something and mastered it, of being competent, is an essential ingredient of successful learning" (p.220). Whitson and Consoli (2009) connect success and motivation: "Emotional memories of success will motivate our students to return to the learning process repeatedly as life-long learners" (p.46).

Finally, Kohn (1993) addresses the role of choice in the classroom, calling it "intrinsically desirable" (p. 221). Choice supports autonomy by helping students choose work

that is appropriately challenging, relevant, and personally appealing. An additional benefit is that choice makes the work of teaching more rewarding for teachers themselves.

Although their books were written twenty-six years apart, Kohn (1993) and Wexler (2019) essentially describe the same problem. The 21st century focus on the isolated skills required to pass a standardized test has not improved student motivation to learn; in fact, students have become less engaged, more bored, and less motivated in modern-day classrooms, leading them to pursue their own interests on personal devices. As Markowitz (2018) notes in her study of the No Child Left Behind 2002 act, the changes that resulted from mandatory testing may have increased engagement initially, but in the long term, overall engagement declined. Markowitz (2018) identifies several reasons for this decrease. First, the focus on material that will be covered on the test has reduced teachers' ability to provide content that students find interesting and relevant. The pedagogical changes that result from focusing on standardized testing, such as more lecture and less peer engagement, lowers their emotional engagement. Additionally, students may feel that they have less autonomy. Teachers must spend more time focusing on test preparation, thus reducing the time for teachers to develop relationships with their students, a key factor in promoting student engagement. Finally, the stress that results from testing and accountability measures dampen students' enthusiasm for and interest in school (Markowitz, 2018). These factors negatively impact student engagement and stand in direct opposition to the theories of motivation that emphasize factors such as relatedness, autonomy, competence, mastery, student choice, and purpose.

Who is Gen Z?

Background of Gen Z Learners

Generation Z students have grown up in a world in crisis (Rothman, 2016), including the recent COVID-19 pandemic. Gen Z's world view has been shaped by multiple catastrophes from 9-11 to wars in Afghanistan and Iraq to a global financial crisis to climate catastrophes (Rothman, 2016; Seemiller & Grace, 2016). They have also witnessed the rise of school shootings and mass violence such as the Boston Marathon Bombing in 2013. Even the online world is dangerous, with hackers, identity thieves, bullies, and sexual predators hidden behind their computer screens. In Gen Z's view, the world is a dangerous place, leaving them less optimistic than previous generations, more pragmatic, and financially moderate to conservative, with a desire to save money. Gen Z also tends to be risk averse (Seemiller & Grace, 2016).

Gen Z students are socially conscious. They have grown up in a diverse world where more women than ever are CEOs and in leadership positions. The percentage of white people in the US population continues to decrease, exposing students in Gen Z to a wider range of people of different racial and ethnic backgrounds. A number of antidiscrimination laws have been implemented, such as fair pay for women, marriage equality, and legislation providing work permits and some level of protection for childhood immigrants. Almost three-quarters of Gen Z students think the rights of transgender people should be protected under the law. Many in Gen Z are concerned about climate change (Seemiller & Grace, 2016).

Gen Z and Technology

Unlike the generations that preceded them, Gen Z has never known a world without technology or the Internet (Rothman, 2016). Access to information is instant, connection via social media is constant, and video viewing is part of their daily digital diet. Their lives are a blend of two worlds, one digital and the other physical (Levine, 2019; Madden, 2019).

Previous generations of learners had a very different relationship with technology. It was not the distraction that it has become with Gen Z learners. Gen Xers (born between 1965 and 1980) consider themselves "techno-literate." (Larsen, 2006, Gen X'ers section). They learned how to use technology as an efficiency tool; for example, to type and correct papers more easily or to pay bills. Millennials integrated technology into their lives and considered themselves "tech savvy," (Cilliers, 2017; Hope, 2016), using technology for creative purposes. On the other hand, Gen Z students grew up in a tech-integrated world (Hope, 2016) and are considered "digital natives" (Cilliers, 2017; Hernandez-de-Menendez, 2020; Hope, 2016; Mohr & Mohr, 2017; Rothman, 2016). Unlike previous generations that saw technology as an add-on that made certain activities more efficient or that enabled higher levels of creativity, technology is a pervasive presence in their lives, whether socially, educationally, or practically, as a tool to help them manage their lives. As Levine (2019) states, "They have never known a world where the physical and the digital were separate" (Enter Gen Z section, para. 1).

While technology is an important tool that helps Gen Z manage their lives, these "highly potent tools for distraction" (Lang, 2020, p.15) have created a conundrum for teachers. Teachers are faced with balancing the integration of technology into their lessons while managing its distraction from those same lessons. Seemiller and Grace (2019) observe that students are "not just tech-savvy but also tech-dependent" (p. 50). Seemiller (2017) found that 47% of students use devices in class to access course information, but a third use them for online communication with people outside of class, nearly a quarter share photos online, 20% look up information, and another 20% listen to music online. The primary reasons that students use digital devices for non-academic purposes are to stay connected (63%), to combat boredom (63%), and to entertain themselves (47%) (McCoy, 2016).

In the classroom: Teaching Gen Z

Unlike previous generations that have viewed the teacher as an all-knowing "sage on the stage," Gen Z views teachers as facilitators (Madden, 2019; Rothman, 2016; Seemiller & Grace, 2016; Seemiller & Grace, 2019), commonly known as the "guide on the side." Though lecture remains a part of their learning experiences, Gen Z quickly tires of teachers who rely on lecture as their primary teaching method (Seemiller & Grace, 2016). According to Madden (2020), "In generations gone by, the teacher was the fountain of information at the front of the classroom, and students would depend largely on the content provided by the teacher for their learning" (p. 242). With information available at their fingertips, Gen Z does not need teachers to impart knowledge to them (Seemiller & Grace, 2016).

In contrast to the lecture-centered classrooms of previous generations, Gen Z learners have different expectations of their learning experiences. Gen Z students "expect a teaching environment in which they can interact in a similar way they do in their virtual worlds. This implies a demand for instant information, visual forms of learning, and replacing 'communication' with 'interaction'" (Cilliers, 2017, p.195). Teachers can meet these expectations by integrating interactive technology, using a visual teaching style, and promoting interaction in the classroom through seating arrangements that facilitate student participation (Cilliers, 2017).

A survey by Barnes & Noble College (2016) showed how Gen Z prefers to learn. Fifty-one percent prefer to learn by doing, for example, by solving problems or analyzing case studies. Thirty-eight percent learn by seeing, through means such as reading, but only 12% prefer to learn by listening, for example, to the teacher in a classroom lecture.

Gen Z likes structure and guidance. Students in this generation want to please their teachers, so they place a high priority on knowing exactly what teachers expect, what they need to do, and when they need to complete assignments. They rely on teachers to provide guidance and reassurance that they are on the right path (Seemiller & Grace, 2019).

In the same vein, Gen Z wants teachers to show them how to do something before they try it on their own (Seemiller & Grace, 2019). When teachers model a new skill, students see how to perform it. Modeling helps students gain confidence in their ability to meet their teachers' expectations and master new skills.

Intrapersonal learning is one of Gen Z's preferred ways to learn (Nicholas, 2020). According to Seemiller & Grace (2016), technology has facilitated their preference for solitary work since they do not need to interact with others in order to learn. As a generation that identifies as self-reliant, they often want to learn by themselves, completing projects on their own. Their intrapersonal learning preference leaves them less interested in group work. Though they like for teachers to specify deadlines, they prefer to pace their own learning (Seemiller & Gracie, 2016).

Known for their short attention spans, Gen Z prefers a variety of activities. Boredom sets in easily for this generation, so teaching in smaller "bites" may be more effective for Gen Z (Rothman, 2017). Using various modalities (lecture, discussions, videos, demonstrations, etc.) keeps students' attention (Hernandez-de-Mendendez, 2020).

To improve students' attention, teachers can explicitly teach students how to focus (Lang, 2020). Focusing "invites students to pause and look carefully at some aspect of your course material in the service of awakening their wonder at it" (Lang, 2020, p. 181). Teachers can spark students' curiosity by asking students to create some sort of product, such as worksheets, a poll,

or a presentation of their learning using a social media template. They can also ask students to connect their learning to their own life experiences; to a book, television show, or movie; to what they are learning in another class; and to their career aspirations (Lang, 2020).

Gen Z is relational by nature; as such, "most are motivated by their relationships and the impact they have on others" (Seemiller & Grace, 2019, p. 25). In their work on how Gen Z students learn, Seemiller and Grace (2016) note that students enjoy learning more when their teachers take the time to get to know them. At the same time, they appreciate authenticity in their teachers, especially teachers who share mistakes that their students can learn from. Coupled with the idea of the teacher as facilitator, Gen Z wants teachers who actively circulate around the classroom as students work on learning tasks, offer help, clarify assignments, answer questions, and provide individual guidance to students. Teachers may also provide this one-on-one attention outside of class time (Seemiller & Grace, 2019).

Gen Z prefers experiential, hands-on learning. As Seemiller and Grace (2019) note, "They like to engage in hands-on experiences that allow them to situate themselves in the middle of the learning rather than on the periphery as an observer" (p. 67). In that same vein, Gen Z learns best by applying their learning to real-world contexts to solve problems (Hernandez-de-Menendez, 2020; Mohr & Mohr, 2016; Nicholas, 2020; Seemiller & Grace, 2016; Seemiller & Grace, 2019).

Gen Z is also a generation of content creators (Madden, 2019). Having grown up in a world with collaborative creation of content in spaces like Wikipedia, they like to be able to take content and create something new with it, and they have the technology tools to do it (Madden, 2019).

Peer learning is also important to Gen Z. When one or more students teach a group, everyone benefits. The one who is acting as the teacher gains a better understanding of the content they are teaching. These group teachers become facilitators of knowledge for their peers (Seemiller & Grace, 2019).

Choice is a key aspect of the learning experience for Gen Z, particularly when they are involved in intrapersonal learning (Seemiller & Grace, 2019). Students may choose a reading from a list provided by the teacher. They may also choose how to present a final project. When students are presented with choices, they are more motivated to complete the assignment.

Including digital tools in classroom learning experience is essential for Gen Z (Seemiller & Grace, 2019). Given their propensity for pragmatic learning and intrapersonal learning, Gen Z learners watch instructional videos on YouTube to solve problems and learn new skills (Madden, 2019; Mohr & Mohr, 2017; Rothman, 2016; Seemiller & Grace, 2016; Seemiller & Grace, 2020). Videos, online research, relevant learning apps, online tests, and collaborative writing via shared documents are all ways to incorporate digital tools in the classroom. Given their lifelong connection to technology, it is no surprise that Gen Z prefers visual teaching methods (Cilliers, 2017; Rothman, 2016). Accordingly, when teachers lecture, Gen Z learns best when the lecture is accompanied by PowerPoint slides and when teachers integrate videos from news clips or YouTube that relate to course content (Nicholas, 2016).

Learning: Assignments and Gen Z

Like Wexler (2019), who proposes teaching a curriculum with a rich knowledge base instead of isolated skills, Nicholas (2020) finds that Gen Z has a preference for pragmatic learning. Assignments for Gen Z must have a clearly defined practical purpose. Busywork and menial tasks do not motivate Gen Z (Mohr & Mohr, 2017). Teachers must present students with

a clear rationale for the assignment that helps students see the value of the work, how its application to the world outside of school, and its benefit to their school or community (Mohr & Mohr, 2017; Seemiller & Grace, 2016). How instructors frame an assignment is important to Gen Z. Sharing an exemplary assignment gives students a clearer idea of what the teacher's expectations are and more confidence in their ability to meet those expectations. Teachers should present students with detailed instructions in writing, checklists, rubrics, and templates. For longer assignments, Gen Z needs benchmarks along the way to help them meet the final deadline. Smaller assignments should build on one another, culminating in a larger final product. Students want feedback along the way that will help them improve the end product (Seemiller & Grace, 2019).

With a plethora of information available online, helping students select credible sources is a critical role for teachers. Information is plentiful, but as Rothman (2017) states, "Gen Z must learn to discover, curate, and manage information." Students continue to need education on what makes a source reliable. Even if students have learned how to evaluate sources for their credibility, this education needs to be ongoing, and students will need to know how to look for reliable sources in different disciplines. Teachers model how to search for legitimate sources, how to analyze them, and how to use them in the work they have been assigned (Mohr & Mohr, 2017; Seemiller & Grace, 2019).

Gen Z is motivated by work that has a real-life application (Nicholas, 2016). As Seemiller and Grace (2016) state, "Practical makes perfect" (p. 175). Gen Z prefers experiential learning and applying work to a real-life setting. They want work that connects to their lives and their personal experiences, and they want what they are learning to have the potential to help others (Seemiller & Grace, 2016).

Though not every assignment needs to involve technology, it is a useful tool for a generation that has grown up in a digital world. As content creators (Madden, 2019), online apps such as iMovie or Explain Everything give Gen Z students the tools they need to present their work in a digital format (Seemiler & Grace, 2019). Digital portfolios provide an online platform for students to display their work, show their progress, list activities and accomplishments beyond the classroom, and even create an online personal brand (Seemiller & Grace, 2019). Teachers can incorporate this generation's interest in social media by assigning work in the format of a blog, meme, or social media post (Seemiller & Grace, 2019). Students may use technology to study online together, message one another, and share and collaborate on work digitally (Seemiller & Grace, 2019). To meet their need for intrapersonal learning, teachers can provide students with self-paced online modules (Hernandez-de-Menendez et al., 2020). Gamification is another common tool that motivates Gen Z (Hernandez-de-Menendez et al., 2020). Games may be used on a stand-alone basis to review material. Similarly, game-like features may be set up so that students receive badges marking milestones as they progress through a course (Seemiller & Grace, 2019).

Gen Z students value feedback on their work. In a long-term project or assignments, when teachers give students feedback at every checkpoint, they can improve the final product. In order to provide the timely feedback that Gen Z desires, teachers must stay on top of their grading. In an experiential, hands-on classroom, teachers provide students with feedback not only on cognitive tasks such as tests but also on their observation of demonstration tasks such as labs and presentations. Giving Gen Z feedback on other aspects of their work, such as participation and behavior, while ungraded, is also beneficial for students and their learning. Allowing students to redo an assignment after revising it according to the teacher's feedback will

help them use the feedback to improve their work and grow as learners (Seemiller & Grace, 2019).

Theoretical Foundations

The challenge that educators currently face is how to combat, or better yet, prevent, boredom, disengagement, and distraction. Lang (2020) offers his solution: "We need to think about how the learning environments that we build for students can be safe and supportive spaces in which they are inspired, encouraged, and rewarded for directing their attention toward the hard work of learning" (p.15). Self-determination theory can provide us with insights into how best to achieve higher rates of interest, motivation, engagement, and achievement.

Self-Determination Theory: Autonomy, Competence, Relatedness

The study of motivation is essential to understanding what motivates and then engages students in learning. As Deci (1995) notes, "*Self*-motivation, rather than external motivation, is at the heart of creativity, responsibility, healthy behavior, and lasting change. External cunning or pressure can sometimes bring about compliance, but with compliance come various negative consequences, including the urge to defy" (p.9). Classrooms that focus on self-motivation rather than compliance or force promote high levels of student engagement.

I used self-determination theory (SDT) as the theoretical framework for this study. Ryan and Deci's (2000, 2020) formulation of self-determination theory includes three basic psychological needs that, when met, foster human growth and development: autonomy, competence, and relatedness (Deci & Ryan, 2000; Ryan & Deci, 2000; Ryan & Deci, 2020). The data collected will be analyzed and categorized according to these three psychological needs.

Within the context of SDT, autonomy refers to a person's sense of ownership of an activity that is interesting and valued rather than controlled by an external force, such as rewards

or punishment (Ryan & Deci, 2020). SDT also links classrooms with high levels of autonomy to academic success (Ryan & Deci, 2020). Many factors facilitate the development of autonomy and intrinsic motivation in the classroom. Reeve and Jang (2006) identify eight behaviors that support autonomy:

> listening, creating time for independent work, giving students opportunities to talk, praising signs of improvement and mastery, encouraging the student's effort, offering progress-enabling hints when students seemed stuck, being responsive to questions and comments, and acknowledging students' perspective and experiences (pp. 215-216).

Students thrive when they are given some choice in what they learn and in how they demonstrate what they have learned (Yarborough & Fedesco, 2020). These autonomous behaviors require much more interaction between students and teachers than traditional teaching methods, such as lecturing or note-taking. In a classroom that puts the principles of autonomy into practice, students are active participants and contributors, and teachers give students opportunities to talk instead of teachers dominating the classroom (Reeve & Jang, 2006). On the other hand, when teachers create a highly controlled environment in which they are at the forefront of all class activities and learning, students' autonomous motivation is much lower (Ryan & Deci, 2020, p.4).

According to Ryan & Deci (2020), the current focus on high-stakes testing has reduced autonomy in the classroom, forcing teachers to focus on material that is expected to appear on the test instead of activities that students would find more interesting and appealing. Given that such tests by their very nature work against autonomy, it is not surprising that high-stakes testing has not been effective at improving schools because "they are formulated so as to externally

pressure teachers and students toward a narrow set of performances" (Ryan & Deci, 2020, p.7), which undermines students' intrinsic motivation and autonomy.

Students' experience of competence affects their level of engagement. Urdan and Kaplan (2000) note that "when students define success as learning, understanding, or developing new skills (i.e., an internal standard for success), they may be more likely to engage deeply with the material and be resilient when they encounter setbacks or obstacles in their learning" (p.2). Urdan and Kaplan also differentiate between mastery goals, which emphasize learning and growth, from performance goals, which focus on comparison with others and competition. Ryan and Deci (2020) state, "In mastery goals, the aim is enhancing the learner's existing competence or knowledge, whereas in performance goals the focus is on the student outperforming others" (p.6). According to Yarborough and Fedesco (2020), when students receive effective feedback on their work and learn how to track their own progress, their feelings of competence increase. They also need classrooms where they can safely make mistakes and learn from them.

Relatedness is concerned with students' sense of connection and belonging (Ryan & Deci, 2020). "In educational settings, relatedness is fostered when students feel connected, both intellectually and emotionally, to their peers and instructors in the class" (Yarborough & Fedesco, 2020, Basic Psychological Needs section). Students' connection with their teachers and peers has long been connected to higher levels of engagement (Bundick et al., 2014; Davis, 2006; Fredricks et al., 2004; Koca, 2016; Skinner & Belmont, 1993). Furthermore, students who experience a greater sense of belonging within a school are more likely to be engaged (Fredricks et al., 2004; Willms, 2003). As Koca (2016) states, "Positive teacher-student relationships can lead to a warm classroom environment that facilitates successful adaptation in school and thereby increases student motivation to learn" (p. 2).

The notions of intrinsic and extrinsic motivation help educators understand how students are motivated. Ryan and Deci (2000) state, "Intrinsic motivation is defined as the doing of an activity for its inherent satisfactions rather than for some separable consequence" (p. 56). However, like the results of studies that show a decrease in student engagement as students get older, intrinsic motivation to learn also decreases as students advance through school (Ryan & Deci, 2000).

On the other hand, when students are motivated by external forces rather than their own interest in or enjoyment of the learning task at hand, they are extrinsically motivated. (Gagné & Deci, 2005; Pink, 2009; Deci & Ryan, 2000; Ryan & Deci; 2000; Ryan & Deci, 2020). However, in a school setting, there is an inherent conflict in between intrinsic and extrinsic of motivation:

> Given that many of the educational activities prescribed in schools are not designed to be intrinsically interesting, a central question concerns how to motivate students to value and self-regulate such activities, and without external pressure, to carry them out on their own (Ryan & Deci, 2000, p.60).

Motivation exists on a spectrum, ranging from highly autonomous, intrinsic motivation to extrinsic motivation to amotivation, which is the lack of motivation (Ryan & Deci, 2000). In education, intrinsic motivation is highly desired because it "results in high-quality learning and creativity" (Ryan & Deci, 2000, p.55). Ryan and Deci's (2000) Self-Determination Theory approaches intrinsic motivation from a different perspective, believing that intrinsic motivation is "*catalyzed* (rather than caused)" (p. 58). They use Cognitive Evaluation Theory (CET) to show how autonomy and competence improve intrinsic motivation. When students experience competence through "optimal challenges, effectance promoting feedback, and freedom from demeaning evaluations" (Ryan & Deci, 2000, p. 58), intrinsic motivation will be enhanced.

However, the sense of competence must be accompanied by a sense of autonomy to fully realize intrinsic motivation (Ryan & Deci, 2000). Classrooms that are characterized as autonomy-supportive rather than controlling are environments in which intrinsic motivation is maintained (Ryan & Deci, 2000). Studies show that students in classrooms with more autonomy-supportive teachers are more intrinsically motivated (Deci et al., 1981; Ryan & Grolnick, 1986).

On the other hand, controlling environments thwart intrinsic motivation. Reeve and Jang (2006) identified six instructional behaviors that negatively correlated with students' autonomy: time holding or monopolizing class materials, showing solutions or answers, stating solutions or answers, giving commands, using should/got statements, and asking questions that are seen as controlling. Deci et al. (2001) found that tangible rewards reduce intrinsic motivation. Threats of punishment (Deci & Cascio, 1972) and externally imposed deadlines (Amabile et al., 1976) also result in a decrease in intrinsic motivation. When teachers issue controlling statements in the forms of directives such as *should* and *must*, students' intrinsic motivation is lowered (Ryan & Deci, 2020). Reeve and Deci (1996) found that students who were pressured to win a competition experienced a decrease in intrinsic motivation. These studies show that reducing students' autonomy also reduces their intrinsic motivation. Under CET, the best way to increase students' intrinsic motivation is to increase their feelings of autonomy and competence, but only if those activities already are inherently interesting for students (Ryan & Deci, 2000). Since most activities that students engage in at school do not fall in the category of personal interest, it is important to understand the varying degrees of extrinsic motivation.

Within SDT, there are different degrees of internalization and integration of values and behavior: "Internalization is the process of taking in a value or regulation, and integration is the process by which individuals more fully transform the regulation into their own so that it will

emanate from their sense of self" (Ryan & Deci, 2000, p.60). More internalized and integrated behaviors result in higher persistence and engagement (Ryan & Deci, 2000).

At the extreme end of the motivation spectrum is amotivation, defined as behavior that "lacks intentionality and a sense of personal causation" (Ryan & Deci, 2000, p.61). However, in SDT, the largest category is that of extrinsic motivation, but within extrinsic motivation, there are four degrees of autonomous or self-determined behavior. Additionally, the perceived locus of causality ranges from external to internal.

Within self-determination theory, Ryan and Deci (2000) differentiate between controlled external motivation and autonomous extrinsic motivation. Controlled extrinsic motivation includes *external regulation*, which is based on the idea of compliance and external rewards and punishments. Autonomous extrinsic motivation (also known as *introjection*) occurs when students are motivated internally by factors such as pride or guilt (Deci & Ryan, 2000; Ryan & Deci, 2000; Ryan & Deci, 2020). *Identified regulation*, another form of autonomous extrinsic motivation, is when people are motivated by the value of the activity because it carries some level of personal importance. *Integrated regulation*, the level of autonomous extrinsic motivation that is closest to intrinsic motivation, is when individuals recognize the value of the activity and integrate it into their own sense of self. (Deci & Ryan, 2000; Ryan & Deci, 2000; Ryan & Deci, 2020). As Ryan and Deci (2000) note, "With increasing internalization (and its associated sense of personal commitment) come greater persistence, more positive self-perceptions, and better quality of engagement" (pp. 60-61). The more autonomous and internalized the behavior or activity it, the higher the engagement.

The Student Engagement Core Model

Bundick et al. (2014) propose the Student Engagement Core (SEC) model to describe and illustrate the concept of student engagement in the classroom. In this framework, there are three elements (student, teacher, and content) that "combine to enhance (or inhibit) student engagement" (Bundick et al., The Student Engagement Core Model section, 2014). Each element interacts with another in what is termed "core interactions" in a way that affects student engagement (Bundick et al., 2014).

Student-teacher interactions are the relationships that students and teachers have within the classroom. If students believe that their teachers care about them, treat them fairly and respectfully, and support their growth, student engagement is higher (Bundick et al., 2014). However, engagement is what Bundick et al. (2014) term a bidirectional concept. Skinner and Belmont (1993) describe it as a reciprocal effect. When teachers have positive relationships with students, not only are students more engaged, so are their teachers (Bundick et al, 2014; Pelletier et al., 2002; Skinner & Belmont, 1993).

According to Bundick et al. (2014), students' relationship with the content of a course also impacts their engagement. When course content is relevant to students' interests, goals, and sense of self, engagement is higher (Bundick et al., 2014).

Teachers' interactions with their course content is a manifestation of their competence. In addition to knowledge of the subject that they are teaching, teachers must exhibit competence pedagogically and socially as they deliver content (Bundick et al., 2014). Thus, "competence refers more broadly to the teacher's effectiveness in facilitating learning about the class material" (Bundick et al., Teacher-Content (Competence) section, 2014).

Finally, all three elements – student, teacher, content – interact in the classroom. Interactions among these core elements are evident when student-teacher relationships are

strong, the course content is relevant, and teachers are competent in both their subject matter and pedagogy (Bundick et al., 2014). When teachers create a "classroom ecology" (Bundick et al, 2014) where all three elements interact, student engagement increases.

Approaches to the Engagement Problem

The 21st century teacher must restore knowledge-based teaching in a way that allows students some level of choice as well as the ability to pursue educational topics that are relevant to their lives or potential career paths. First, teachers need to understand the attributes of the students currently populating their classrooms. Generation Z students, born between 1995 and 2010, have unique learning needs and styles, and if their teachers better understand how they learn, they will engage them at higher levels (Seemiller & Grace, 2016; Seemiller & Grace, 2019).

Current Approaches to Teaching Gen Z

Educational Technology

Given the blended physical-digital world that Gen Z inhabits (Levine, 2019; Madden, 2019), technology has often been used as a way to engage this generation of students. In their study of Gen Z, Hernández-de-Menéndez et al. (2020) propose the use of technology to enhance learning. Additionally, technology use helps students develop new skills and learn how to collaborate in person or virtually (Hernández-de-Menéndez et al., 2020). With their instant access to information, Gen Z students can learn whenever and wherever they want (Seemiller & Grace, 2016). Since they have had access to the Internet and technology throughout their lives, they are comfortable using it at school. As Seemiller and Grace (2016) observe, "Traditional school work using paper and books is rapidly being replaced by online work modules, instructional videos, and handheld learning devices such as smartphones and tablets" (p.184).

However, the use of technology presents numerous challenges. First, given the generation gap between Gen Z and most of their teachers, many teachers are not comfortable using technology at the same level as their students. Educational institutions must invest in training teachers so that they can use the latest technology in a pedagogically sound way (Hernández-de-Menéndez et al., 2020). Given Gen Z's dependence on technology, they often believe whatever they read online. It is important for them to learn how to distinguish between reliable and unreliable sources of information online (Hernández-de-Menéndez et al., 2020; Rothman, 2016; Seemiller & Grace, 2019). Finally, and perhaps most notably, is Gen Z students' shorter attention span and need for immediate information or response (Hernández-de-Menéndez et al., 2020; Lang, 2020; Seemiller & Grace, 2016).

Gamification

Gamification is a strategy that has become increasingly popular in recent years. Deterding et al. (2011) define gamification as "the use of video game elements to improve user experience and user engagement in non-game services and applications" (Introduction). However, according to Landers (2014), for gamified learning to be successful, two elements must be present. First, the games must cause the desired behavior on the part of the student. Second, the desired behavior must then improve learning. As Landers (2014) states, "The instructor must ensure that the game elements lead to the behavior and also that the behavior leads to learning" (p.763). While gamified learning is certainly an instructional tool that can be used to enhance or improve motivation, it does not replace the instructor or effective teaching; in fact, gamification depends on effective instruction (Landers, 2014).

Furthermore, there is minimal evidence of the positive impact of gamification on learning. Dichev and Dicheva (2017) found that gamification had a positive impact in only 25%

of studies, while 64% were inconclusive and 10% had a negative impact. “While it seems apparent that gamification has the potential to create enhanced learning environments, there is still insufficient evidence that it (1) produces reliable, valid and long-lasting educational outcomes, or (2) does so better than traditional educational models” (Dichev & Dicheva, 2017, p.21).

Flipped classroom

Gen Z’s propensity to use digital learning makes the flipped classroom an increasingly popular instructional strategy. According to Nicholas (2020), 45% of students want online videos as part of their study materials. In a flipped classroom, students watch lectures at home to acquire the basic information so that they can participate in a more interactive activity in class that involves application of their new learning (Seemiller & Grace, 2016). As Seemiller and Grace (2016) state,

> By combining the intrapersonal learning approach of individual preclass [sic] homework and social learning approach of interactive in-class discussion and activities, flipped classrooms can provide Generation Z students with a pedagogy that aligns seamlessly with how they prefer to learn (p.205).

Muir’s (2021) study positively correlates flipped learning with the three needs posited by self-determination theory: autonomy, competence, and relatedness. Bond’s (2020) review of 107 publications on flipped learning found evidence of positive engagement in the flipped learning approach, with improvement in peer collaboration and teaching, higher levels of enjoyment during the learning process, and the development of positive relationships among peers and with teachers. Additionally, students showed improvement in attitudes, motivation, interest, self-efficacy, and engagement as a result of using the flipped classroom model (Bond, 2020).

However, Bond's (2020) same analysis of publications on flipped learning revealed that students' grades were not higher in the flipped learning model. Additionally, half of the studies that Bond (2020) reviewed reported some level of disengagement. Finally, the success of flipped learning may depend on the subject area. When the subject area requires a high level of interaction or a hands-on approach, students might feel overwhelmed with any learning that occurs before class (Cheng et al., 2019). Teachers must also ensure that students have the necessary self-regulation skills to be successful in a flipped classroom model (Cheng et al., 2019).

Project-based learning

Project-based learning (PBL) has increased in use as schools move away from more traditional models of education. According to Wurdinger et al. (2007), "project-based learning is a teaching method that taps into students' interests because it allows them to create projects that result in meaningful learning experiences" (p.151). Johnson and Delawsky (2013) propose the use of PBL as "one teaching strategy that could be used to re-engage students who have been disengaged from their learning as a result of the monotony of teachers using only one teaching strategy" (p. 566). PBL provides students with assignments that involve student choice of interesting and relevant topics, autonomy, and self-directed learning, all of which enhance students' motivation to learn (Wurdinger et al., 2007).

Wurdinger et al.'s (2007) found multiple benefits of PBL, including learning that is active, interesting, and relevant, along with self-directed learning, improved motivation, and better communication skills. Students were more focused and excited about their learning, took ownership and responsibility for their projects, and were much more engaged with PBL than they were with other, more passive forms of learning. Similarly, Johnson and Delawsky (2013)

found that PBL may increase students' cognitive engagement, noting a 12% increase on the unit assessment for students who had been taught using PBL.

PBL also presented teachers with some challenges in Wurdinger et al.'s (2007) study. Teachers have to give up some control in order for students to be able to work independently. Additionally, it is unclear if PBL improves student's scores on standardized testing. Finally, teachers require some, albeit minimal, training to implement PBL successfully (Wurdinger et al., 2007).

Teacher behaviors

While there are many factors that contribute to students' engagement in the classroom, teachers and the interactions that they have with students are at the center. Reeve and Jang (2006) highlight the important role that teachers play in facilitating student engagement through the provision of a learning environment rich in relationships and supportive of student autonomy. Pianta et al. (2012) see "classrooms as contexts in which perhaps the key mechanism through which classroom experiences add value for development is through the pivotal role of student-teacher relationships in the very process of engagement" (p. 366). Finally, teachers' instructional choices also play a critical role in student engagement (Mart, 2011).

The classroom atmosphere that teachers create is another vital aspect of student engagement. Classroom contexts are "at the core of student's [sic] engagement" (Furlong et al., 2003, p. 106). Bundick et al. (2014) term the teaching environment in which students learn as the "classroom ecology," which is the interaction among the student, the teacher, and the context (Concluding Remarks section). The relationships between students and teachers are a central element of the Student Engagement Core. When teachers offer students support, show that they

care about them, and treat them fairly and respectfully, students are more engaged (Bundick et al., 2014).

The learning context also impacts engagement. The idea of *environmental complexity* is defined as "the simultaneous presence of environmental challenge and environmental support" (Shernoff et al., 2017, p. 203). Environmental challenge refers to learning activities that are appropriately challenging for a student's skills within a specific discipline. Environmental support responds to students' learning needs and provides students with appropriate levels of autonomy that foster competence and allow for student self-expression. Additionally, the relationships between students and teachers and among students are key to helping students attain success and meet the challenges posed by the teacher. Their study finds that environmental support but not environmental challenge positively impacts student engagement (Shernoff et al., 2017).

The behavior of teachers in the classroom has a significant effect on engagement. According to Skinner and Belmont (1993), a teacher's behavior, as measured by involvement, autonomy support, and structure, has a reciprocal relationship with students' classroom engagement. To provide students with appropriate structure in the class, teachers clearly communicate what they expect from students, reliably respond to student needs, offer students the help they need, and adjust their instruction to the students' levels. Autonomy support, the latitude given to students to determine their behavior, is provided when teachers connect students' interests to the content they are teaching. Involvement is a relational factor that refers to students' relationships with their teachers and classmates (Skinner & Belmont, 1993). When teachers are more involved with their students, students experience greater levels of relatedness, competence, and self-determination.

Instructional strategies

In addition to the role of teachers and classroom environment, the teaching methods used also impact engagement. Harbour et al. (2014) note the importance of modeling the skill or behavior that they want students to learn, providing students with multiple opportunities to respond to promote student engagement with the material being taught, and the use of feedback to give students the information they need about their work so that they can improve. Johnson and Delawsky (2013) recommend project-based learning as one instructional strategy "that could be used to re-engage students who have disengaged from their learning as a result of the monotony of teachers using only one teaching strategy" (p. 566). Their research showed improvement in cognitive engagement when project-based learning was used (Johnson & Delawsky, 2013).

Research Methodology

I used a qualitative approach to this problem. This approach is appropriate because it relies on data taken from classroom teachers. Once qualitative data was collected, thematic analysis was employed to identify and analyze patterns (themes) in the data (Braun & Clarke, 2006). I analyzed the themes that emerge from the data under the umbrella of self-determination theory and its focus on three basic psychological needs: autonomy, competence, and relatedness (Deci & Ryan, 2000; Gagné & Deci, 2014; Ryan & Deci, 2000; Ryan & Deci, 2020; Yarborough & Fedesco, 2020).

Data was collected through a semi-structured interview process in focus groups with teachers who have volunteered to participate. In addition to focusing on teacher behaviors and teaching methods that improve student engagement, teachers were asked to consider the role of technology in engagement and disengagement.

Conclusion

Education has changed dramatically since the turn of the 21st century. Technology has been both a significant innovator and a dramatic disrupter in teaching and learning. With the current generation of students experiencing a lifelong connection to and distraction by technology, teachers must adapt. Lang (2020) states, "We will not succeed in teaching today's students unless we make a fundamental shift in our thinking: away from *preventing distraction* and toward *cultivating attention*" (p.15). This study aims to give teachers the tools to do just that.

Artifact II

Introduction

This section describes the design of the study, the research approach, and the analysis of the data collected. Additionally, it explains why this approach and study design were chosen, how the participants were selected, and how the data was analyzed. Finally, it presents the results of the data analysis.

The purpose of this study was to identify teacher behaviors and instructional practices that increase student engagement and motivation and reduce boredom and disengagement at the secondary level. This study sought to the following questions:

1) What teacher behaviors and instructional practices decrease boredom and distraction in class and increase engagement among Gen Z secondary students?
2) How can technology be used to enhance engagement without increasing distraction among Gen Z students?

Research Approach

This qualitative study explored optimal ways for teachers to engage students through their interactions with them in the classroom and through teaching strategies that meet the needs

and learning styles of Gen Z within the context of *self-determination theory*. This study also explored how teachers' actions impact students' feelings of autonomy, competence, and relatedness. The goal was to identify the most effective ways to engage Gen Z students in deep, relevant learning.

A qualitative research method is the most effective way to collect data on the topic of student engagement among Gen Z secondary students. Qualitative research provides an "in-depth exploration of a central phenomenon" (Creswell & Guetterman, 2019, p. 206). The researcher then chooses sites and participants who best represent that phenomenon as data sources (Creswell & Guetterman, 2019). The use of qualitative research methods provides the researcher with a new or more in-depth understanding about the phenomenon being studied (Hoepfl, 1997). While the phenomenon of student engagement is relatively well-studied, the purpose of this study is to expand the understanding of it as it pertains to Gen Z students within the classroom setting and in the technology-rich environment where Gen Z students learn, which would be difficult to understand with quantitative methods.

Within the qualitative research method, a constructivist approach was used. As Teherani et al. (2015) note, "*Constructivist* researchers believe that there is no single reality, but that the researcher elicits participants' view of reality" (p. 669). Holstein and Gubrium (2008) situate constructionism in the realm of everyday actors and activities with a focus on discourse and interaction; the ability of the researcher to listen intently is key to discovering and exploring the social reality of those they are studying. In the case of the current study, qualitative research methods capture participants' experience of student engagement within their classrooms and among their students, a phenomenon that does not lend itself naturally to numerical measurement.

According to Leedy and Ormrod (2019), qualitative researchers "recognize that the issue they are studying has many dimensions and layers, and they try to portray it in its multifaceted forms" (p. 228). Student engagement is one such multifaceted, complex issue. Bryson and Hand (2007) refer to the "complexity and diversity of the issue of engagement" (p. 350), with a "continuum of engagement" (p. 353) among students, ranging from those who are highly engaged to those who are disengaged. Student engagement is a fluid concept that varies according to factors such as the nature of the assignment or learning task, the unit of study, and the course itself (Bryson & Hand, 2007). A qualitative research approach allows the researcher to explore and more effectively study the nuances of student engagement.

The model that Fredricks et al. (2004) propose for studying engagement presents it as a multi-faceted, complex construct, dividing it into three types of engagement: behavioral, emotional, and cognitive. Behavioral engagement measures students' participation in school, both in and outside of class. Emotional engagement refers to students' dispositions toward school, both positive and negative, and all that encompasses, including teachers, peers, staff, and learning. Finally, cognitive engagement looks at students' buy-in to the intellectual activity that takes place in the classroom; it measures their effort and their willingness to delve into complex topics and ways of thinking about the material they are studying (Fredricks et al., 2004). Fredricks et al. (2004) conclude,

> The fusion of behavior, emotion, and cognition under the idea of engagement is valuable because it may provide a richer characterization of children than is possible in research on single components. Defining and examining the components of engagement individually separates students' behavior, emotion, and cognition. In reality these factors are dynamically interrelated within the individual; they are not isolated processes (p. 61).

Research by Wang et al. (2011) identifies six first-order factors that impact student engagement: Attentiveness, School Compliance, Valuing of School Education, Self-Regulated Learning, and Cognitive Strategy Use (Wang et al., 2011). Then, the researchers put these factors into the model proposed by Fredricks et al. (2004) to create another level of what they term second-order factors. In their model, behavioral engagement encompasses Attentiveness and School Compliance, emotional engagement includes Valuing of School Education and School Belonging, and cognitive engagement covers Self-Regulated Learning and Cognitive Strategy Use (Wang et al., 2011). Their model further supports the idea of student engagement as a complex concept.

The Student Engagement Core (SEC) model proposed by Bundick et al. (2014) also uses Fredricks et al.'s (2004) complex model of engagement: "At the heart of the SEC model are the *interactions* among the three primary elements - teacher, student, and content" (p.55). Bundick et al. (2014) refer to these interconnected layers of engagement as the "classroom ecology." The multifaceted interactions represented by the Student Engagement Core are most effectively captured by a qualitative research method that allows for the emergence of rich, detailed, contextualized data from teachers in what is referred to as a "natural setting" (Teherani et al., 2015), in this case, the classroom.

Research Site

The research site was Wolf Run High School, a pseudonym for a large public high school in Texas. According to the Texas Education Agency, total enrollment during the 2021-2022 school was 5,315, of which 47.5% identified as White, 13.4% as African American, 14.8% as Hispanic, 0.5% as American Indian, 20.1% as Asian, 0.4% as Pacific Islander, and 5% as two or more races. The percentage of non-white students was 54.2%. Economically disadvantaged

students comprised 11.5% of the population, 9.4% receive special education services, and 4.4% are emergent bilingual/English learners. Wolf Run High School has 266.4 full-time teachers, and there are 20 students per teacher. Teachers at Wolf Run High School are generally experienced. Beginning teachers are 7% of the teachers, 17.9% have 1 to 5 years, 22.8% have 6 to 10 years, 35.3% have 11 to 20 years, 14.2% have 21 to 20 years, and 2.9% have more than 30 years of experience. White teachers are 80.4% of the teaching staff, with 19.7% non-white.

Wolf Run High School received a score of 93 and an A rating from the Texas Education Agency during the 2021-2022 school year . The Class of 2020 had a 97.3% graduation rate. Of the STAAR tests administered at Wolf Run High School in 2020-2021 school year, 78% of students met grade level standards, compared to 41% in the State of Texas. In 2019-2020, the average SAT score was 1221, compared to 1019 statewide, and the average ACT score was 25.8, compared to 20.2 statewide. Wolf Run High School's performance data is well above average for the state of Texas.

The population in 2022 for Wolf Run, Texas was 104,040, with a median household income nearly double the statewide median income and a poverty rate about 10% lower. The median property value in World Run, Texas is over $130,000 higher than the statewide rate. Wolf Run is an affluent, suburban community.

Data sources

Semi-Structured Interviews

This study examined a classroom's ecology, focusing on the role that the teacher plays in fostering student engagement with academic content. In order to capture the complex and interrelated nature of the concept of engagement from the perspective of the teacher, I used a semi-structured interview process to collect data from teachers. In their study on student

engagement, Bundick et al. (2014) state that they "are primarily animated by a desire to affect teacher practice" (para. 2). I share this desire, and with the results of my study, I created a professional development program that focuses on impacting teacher behavior in the classroom.

For this study, I conducted two semi-structured interviews with secondary classroom teachers to investigate teachers' perspectives on what motivates and engages Gen Z students. The semi-structured interview is a flexible approach that allows the researcher to explore responses in more detail as they arise in the interview (Gill et al., 2008).

Focus Groups

Powell and Single (1996) define a focus group as "a group of individuals selected and assembled by researchers to discuss and comment on, from personal experience, the topic that is the subject of the research" (p. 499). Leading a discussion of student engagement with secondary teachers allows the researcher to explore the topic with those who have significant personal experience with engaging students in learning. Using one of the key elements of the Student Engagement Core, teachers, as the source of data gives the researcher an internal perspective on a "classroom ecology" that promotes engagement.

One of the advantages of focus groups is that the information flows from the natural engagement among participants (Creswell & Guetterman, 2019). Creswell and Guetterman (2019) suggest that using a focus group is best "when the interaction among interviewees will likely yield the best information and when interviewees are similar to and cooperative with each other" (p. 218). Even when they teach different disciplines, teachers share a common role and a common experience with students. The natural back-and-forth among teachers creates a discussion environment in which they can use each other's ideas to further the discussion, add more depth and nuance, and draw conclusions about the nature of student engagement.

Gill et al. (2008) differentiate between two types of focus groups, a stranger group and a pre-existing group. In their words, "Pre-existing groups may be easier to recruit, have shared experiences and enjoy a comfort and familiarity which facilitates discussion or the ability to challenge each other comfortably" (p. 293). I used a pre-existing group, all teachers at the same high school, so that they can reflect on their shared experiences in a comfortable, collegial setting.

The qualitative approach allows for an interactive model. Both self-determination and the Student Engagement Core are interactive models, which was captured best by hearing about the experiences of teachers, something that cannot be quantified and is best told through qualitative data collection, in this case, focus groups. The purpose of the study is not to measure engagement but rather to discuss how to engage students best and to identify which teacher behaviors and instructional strategies result in engaged student behavior.

The ideal size for a focus group varies. Gill et al. (2008) propose six to eight as ideal but state that groups can be as small as three and as large as 14. Creswell and Guetterman (2019) describe a typical focus group as having four to six participants. The two focus groups in this study had three participants each. The teachers in the focus groups represented a variety of disciplines, including art, science, English, ASL, Spanish, and special education.

Methodology

Once the data was collected, I used a thematic approach to analyze it. "Thematic analysis is a method for identifying, analysing and reporting patterns (themes) within data" (Braun & Clarke, 2006, p.79). Braun and Clarke's (2006) thematic analysis includes the following six steps:

1. Familiarization with the data

2. Generation of initial codes
3. Search for themes
4. Review of themes
5. Definition and naming of themes
6. Production of the report

While the steps in thematic analysis make it appear linear, the process of analyzing data becomes recursive as the researcher goes back and forth to reach a more nuanced, in-depth understanding of the data (Braun & Clarke, 2006). The recursive process allows the researcher to narrate the story that the sum of the data tells.

Through the semi-structured interview and focus group methods, I was able to ask questions that evoked responses related to self-determination theory while also having the flexibility to pursue additional topics and themes raised by the participants. The natural interaction that occurs among participants in a focus group allows for a flow of data that is based on the actual classroom experiences of teachers from different disciplines, which also allowed me to explore Bundick et al.'s (2014) idea of "classroom ecology" more in depth.

Thematic analysis can be inductive when the researcher does not attempt to fit the data into the researcher's preconceived ideas about the topic. However, for this study, I chose to use thematic analysis in a more theoretical or deductive way (Braun & Clarke, 2006). This type of data, led by the researcher, allows coding for specific research questions and themes. By starting with Ryan & Deci's (2000, 2020) well-known self-determination theory and the three basic psychological needs (autonomy, competence, relatedness) that fall within it, I employed a deductive coding process in which data were categorized under the three overarching themes of self-determination theory. The addition of purpose from Pink's (2009) work, which relies heavily

on the research of Ryan and Deci and self-determination theory itself, was a natural extension of the themes based on the data collected.

Participants

Sampling method

I used a purposeful sampling process to select individuals for the focus groups. According to Creswell and Guetterman (2019), purposeful sampling is used when "researchers intentionally select individuals and sites to learn or understand the central phenomenon" (p. 206). They continue by stating that "purposeful sampling applies to both individuals and sites" (p. 206). The selection of teachers from a high school in Texas is an effective way to learn about student engagement strategies.

In order to gain a deeper understanding of student engagement from multiple points of view, maximal variation sampling was used (Creswell & Guetterman, 2019, p. 207). For this study, I sought teachers from a variety of disciplines with varied experience and backgrounds to further explore common themes in how effective teachers engaged students.

I used purposive sampling to select participants. According to Leedy and Ormrod (2019), in purposive sampling, a researcher selects "particular participants who can provide certain desired perspectives on a topic or issues" (p. 271). Convenience sampling was also employed, which is when a researcher uses "readily available research sites and/or easily accessible individuals who can provide insights related to central research questions" (Leedy & Ormrod, 2019, p. 242).

Finally, typical sampling was used, which is when the "researcher studies a person or site that is 'typical' to those unfamiliar with the situation" (Creswell & Guetterman, 2019, p. 208). By using high school teachers from a typical high school in Texas, the data collected can be

extrapolated to high schools across the country. It is also accessible and understandable to any educator outside of the research site.

Participants

All participants were teachers at Wolf Run High School, a pseudonym for a public high school in Texas. Wolf Run High School is a large, high-performing suburban high school in Texas. The first focus group had three participants and lasted one hour. Three teachers participated in the second focus group, which lasted 36 minutes. Additionally, two individual interviews were conducted using a semi-structured interview protocol. All participants were teachers at Wolf Run High School. Two were male, and six were female. Teachers came from a variety of disciplines, including special education, science, English, Spanish, ASL, and art.

Protection of Participants' Rights

Measures were taken to ensure the protection of the participants' rights. Consent to perform the study was obtained from the principal of Wolf Run High School. An email was sent from the principal's office seeking volunteers for the study, and interested teachers contacted me directly. Other interested parties were contacted directly via email per the recommendation of prior participants. Participation was voluntary.

Each participant completed a consent form prior to the focus group, and all used a pseudonym as their screen name on Zoom. Participants had the opportunity to rescind their consent at any time. Had a participant rescinded consent, answers would have been deleted through the use of the pseudonym from the transcript. Participants were allowed to ask questions prior to and during the focus group. A brief introduction to the project was provided both via email prior to the Zoom focus group meeting and at the beginning of each focus group session.

Data Collection and Recording

Focus group and interview profiles

I conducted two small focus groups with teachers from the following subject areas: art, science, English, special education, American Sign Language, and Spanish. Additionally, I used a semi-structured interview process with two teachers. Data was collected over a one-month period with teachers from Wolf Run High School, a pseudonym for a Texas high school. The principal sent out a message to teachers asking for volunteers to participate in a focus group. Teachers were instructed to contact me directly, which they did via email. A few teachers were contacted directly via email per the recommendation of other participants. Then they received a Google Form that they filled out with dates that they were available, a pseudonym, and any questions they had. From that questionnaire, I proposed dates, and teachers selected the dates that worked best with their schedules. Prior to the focus group meeting, I sent out a consent form via email, which participants returned to me with the appropriate signatures once they had read it. I added my signature and returned it to them via email. Participants received an email with instructions, information about the focus group, and a link to a Zoom meeting.

For each focus group and interview, I started recording once all teachers were present, questions about the process had been answered, and pseudonyms had been verified. I started by asking the following questions:

1. What motivates the typical student?
2. How motivated do you perceive your students to be?
3. What causes students to be bored in class?
4. What actions do you take to prevent boredom during class?
5. How would your students describe you as a teacher?
6. How do you build relationships with your students?

7. How do you foster student independence and autonomy with their learning?

8. What are your most effective strategies for helping students master the content you teach?

9. What are some of your most successful instructional strategies? Can you give a couple of examples and explain why they are successful?

10. How do you use technology in your lessons?

11. How do you decide when using technology will enhance instruction compared to more traditional instructional strategies?

12. How do you respond when students are distracted by digital devices?

Follow-up questions were asked for clarification or elaboration purposes during each focus group and interview.

In addition to recording the focus groups and interviews, while participants were talking, I took written notes. Zoom produced a written transcript of each focus group. After each focus group and interview, I reviewed the transcript for accuracy, and it was checked against my written notes. Each Zoom focus group and interview session was viewed once the transcript had been generated and printed, and corrections were made in spelling, punctuation, and content during the follow-up viewing of each video.

Data Analysis

Thematic analysis, as described by Braun and Clarke (2006), was used to analyze the data from the focus groups. The six-step process as explained by Braun and Clarke (2006) was followed to find overarching themes and subthemes.

As Braun and Clarke (2006) note, this process is not linear but rather recursive. I went back and forth quite a bit in the reading of the transcripts; the creation of themes and codes;

rereading the data; and refining the themes and codes. The purpose of moving through the steps was to identify greater details, look for patterns, see connections among the data from the various participants and focus groups, refine the themes and codes, and connect each theme with the overarching theme of technology. I found that technology use was present to some degree in each theme, with technology acting as a proxy person at times, which contributed to understanding the power that technology has in today's classroom and how important it is for educators to understand how to harness its power to engage students when appropriate.

Step 1: Familiarization with the data

Braun and Clarke (2006) advise researchers to write from the beginning as they brainstorm ideas, coding possibilities, and themes. I began the writing process during the initial reading of the data by marking phrases of interest, starring information that stood out, and noting connections with self-determination theory and its three psychological needs, autonomy, competence, and relatedness. During this phase, familiarity with the data was first achieved by watching the video of the Zoom focus group with the written transcript in hand. Corrections were made to the transcripts. As I listened to the participants' comments, key phrases were underlined and notes were made in the margin. Particular attention was paid to the tone of the speaker, punctuation, and similarities in comments made among the participants and among the four focus groups. Also highlighted were connections to self-determination theory.

Step 2: Generation of initial codes

Once the transcripts were verified, I reread each transcript and took notes on key ideas and phrases. From the rereading of the transcripts and the notes, I made a list of codes for each focus group. The criteria for generating a code were the frequency of an idea or comment appeared, statements that appeared to describe student engagement in a unique way, comments

that captured the essence of student engagement, and ideas that related specifically to the three tenets of self-determination theory: autonomy, competence, and relatedness.

Steps 3, 4, and 5: Search for themes, review themes, define and name themes

Ryan and Deci's (2000) framework for motivation, the tenets of self-determination (autonomy, competence, relatedness) plus Pink's (2009) idea of purpose framed my initial coding efforts. Codes from step 2 were organized into thematic maps representing each theme. Two versions of each thematic map were created, with the second map organizing the information into codes.

After several readings of the data and careful consideration of the codes, the themes were altered based on multiple readings of the data. The categories identified in self-determination theory (autonomy, competence, relatedness) were renamed to capture the nature of classroom engagement more precisely. Instead of self-determination theory's relatedness category, the theme was renamed relationships. Autonomy remained the same, but self-determination theory's idea of competence was more accurately captured by mastery, a term that Pink (2009) preferred as well. In the end, purpose was changed to practical purpose to reflect the more utilitarian view of the concept that emerged from the reading of the data.

Step 6: Produce a report

The findings section presents my final analysis of the data, including multiple codes for each theme. For each theme, the impact of technology is discussed. Finally, generational differences in learning and motivation discussed by the participants in the study are presented.

The findings are then used to create a three-part professional development program for teachers who seek to improve engagement in their classroom. The first part is an asynchronous program that teachers complete individually apart from their colleagues. In this section, they will

learn about self-determination theory, different types of engagement, and characteristics of Gen Z. To help them understand generational differences in students, they will complete a survey about their own learning experiences as a secondary student. Even if they are Gen Z teachers, the survey may shed light on the teaching practices that their non-Gen Z instructors may have used. As they complete this section, they will use a playbook that I have created to take notes and reflect on their learning.

The second part of the professional development program is completed in small groups, such as departments, grade levels, interdisciplinary teams, or another grouping of their choosing. I have prepared three videos, one about relationships, another covering autonomy and mastery, and a final one about practical purpose. Participants will complete pre-viewing reflections that they will share with their group, take notes during the video, and then discuss how they can adopt strategies presented in the videos to engage their students. Once all the videos have been viewed and discussed, participants will engage in a final group discussion that includes how their own teaching styles have changed, how technology can be used within each theme to improve engagement, how to promote a healthy relationship with technology, and how they can improve their own "classroom ecology." At the end of the training, participants will create a final product, choosing from a list of options or designing their own product. Product options include:

1. A plan to build relationships, autonomy, mastery, and practical purpose into a lesson plan.
2. Goals in all four areas to be shared with a colleague, supervisor, chair, district staff.
3. Adding the four engagement measures to a curriculum map.
4. Setting the tone with RAMP during the first month of school

Codes and Definitions

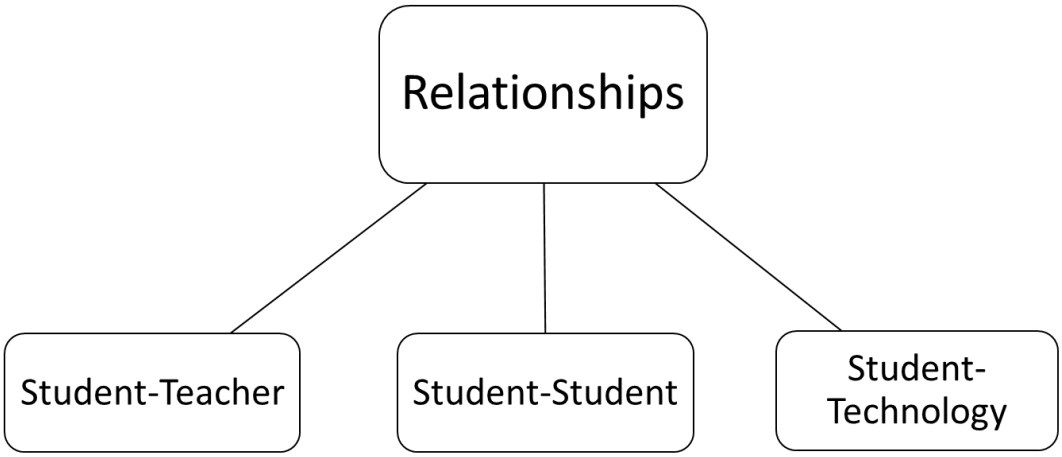
Relationships

Relatedness is one of the three basic psychological needs that Ryan and Deci (2000, 2020) identify as necessary for psychological growth, learning, mastery, and feeling connected to others. An essential aspect of classroom ecology, relatedness promotes growth and learning (Bundick et al., 2014; Ryan & Deci, 2000). The Student Engagement Core, a model proposed by Bundick et al. (2014), reiterates the importance of relationships in the classroom, particularly between teachers and students. When the teacher has created an environment where students feel cared about, supported both academically and emotionally, and respected, they achieve at a higher level (Bundick et al., 2014). Students who experience peer support enjoy learning more, are more tenacious in completing learning tasks, and are more willing to contribute to class discussions and ask questions (Sulis & Philp, 2021). Ultimately, learning is a social process that necessitates strong relationships in order to be effective (Reeve, 2012).

The focus groups data revealed three types of relationships, which the researcher organized into codes, as shown in Figure 1. The primary relationship is the one between students and teachers. As such, it directs and impacts all subsequent relationships. Once a relationship with the teacher was established, relationships between students were fostered by the teacher in various ways. The final relationship is technology, a ubiquitous presence in Gen Z students' lives. The teacher once again led by helping students establish healthy relationships with technology.

Figure 1

Three types of relationships: Codes



Autonomy

Ryan and Deci (2020) define autonomy as "a sense of initiative and ownership in one's actions" (p. 1). It is often juxtaposed with control. When teachers are experienced as controlling their students' behavior, their intrinsic motivation is diminished (Ryan & Deci, 2000). Reeve and Jang (2006) define autonomy support as "identifying, nurturing, and building students' inner motivational resources" (p. 216). Furthermore, only after a positive student-teacher relationship has been nurtured can students feel and exercise autonomy in the classroom (Reeve & Jang, 2006).

Autonomy-supportive teachers are open to students' perspectives and experiences, give students opportunities to take ownership of the learning, encourage students to take initiative in their learning, and offer students meaningful, relevant choices and learning activities that incorporate their personal interests (Ryan & Deci, 2020). Students thrive when there is appropriate structure that sets clear expectations and goals through consistent policies and rich, meaningful feedback. In contrast to autonomy support and structure, a controlled classroom environment where students feel pressure to behave a certain way diminishes autonomy and by

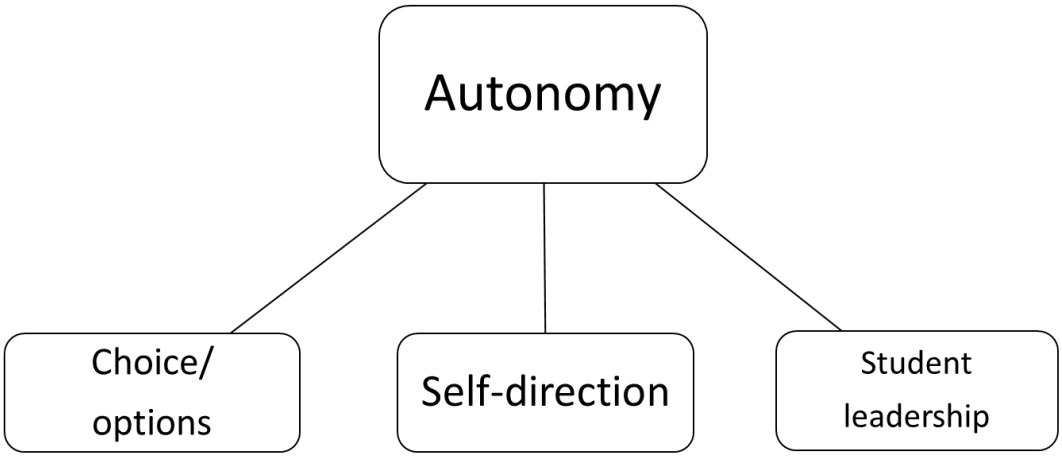
extension, intrinsic motivation (Deci & Flaste, 1995). Phung et al. (2021) found that when students were less constrained and had more choice in classroom activities, they enjoyed learning more, were more focused, and experienced greater freedom of expression. This higher level of choice supported learners' autonomy.

In an autonomy-supportive classroom, teachers offer their students meaningful, relevant choices and learning activities that incorporate their personal interests (Ryan & Deci, 2020). Characteristics of autonomy-supportive teachers include listening to students, giving students time for independent work, providing students with the opportunity to speak, recognizing students' improvement and mastery, encouraging effort, giving students suggestions that help them persevere through challenging work, responding to students' questions and concerns, and acknowledging students' points of view (Reeve & Jang, 2006). Autonomy-supportive classrooms increase students' motivation while controlling environments decrease it (Deci & Flaste, 1995; Ryan & Deci, 2000; Ryan & Deci, 2020).

Under the umbrella of autonomy, I identified three codes: choice/options, self-direction, and student leadership, which are shown in Figure 2.

Figure 2

Autonomy: Codes



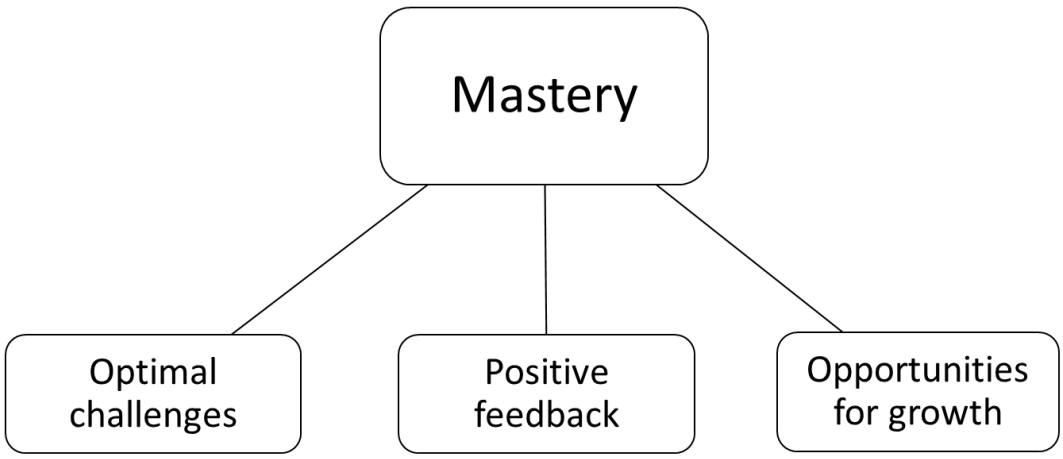
Mastery

In a classroom setting, competence, one of the three basic psychological needs that Ryan and Deci (2000, 2020) identify as necessary for motivation, includes students' experience of appropriate levels of challenge accompanied by growth-oriented feedback and free from negative judgments about students' work. I found that these three aspects of mastery formed codes within the data. These codes are illustrated in Figure 3. Competence is achieved when students experience success as they acquire, develop, and demonstrate mastery of new skills (Kohn, 1993; Urdan & Kaplan, 2020). Cognitive Evaluation Theory (CET), a subtheory of self-determination theory, posits that competence will not improve motivation unless it is accompanied by a sense of autonomy (Ryan & Deci, 2000). Pink (2009) describes engagement as a "route to mastery" (p. 110), defining it as "the desire to get better and better at something that matters" (p. 109). Competence is best realized in a structured environment where students experience "optimal challenges, positive feedback, and opportunities for growth" (Ryan & Deci, 2020, p. 1). These indicators are used to demonstrate how the teacher can create an environment focused on

mastery rather than performance, one in which student growth is prioritized and teachers support such growth through their feedback and use of appropriate levels of challenge.

Figure 3

Indicators that support mastery



Note. These codes, as posited by Ryan and Deci (2000, 2020), support mastery. I found these three aspects of mastery present in the data collected in the focus groups.

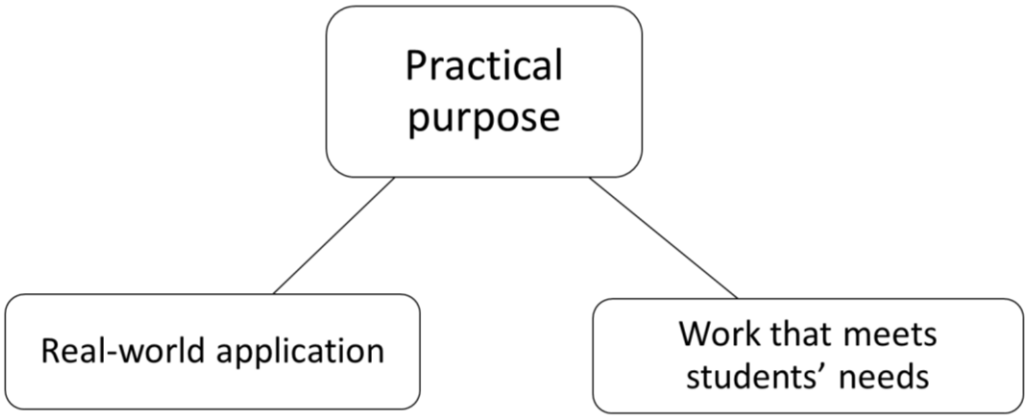
Practical Purpose

Ultimately, the three psychological needs that lead to intrinsic motivation in self-determination theory, autonomy, competence, and relatedness, lead to work that has a greater purpose. Gen Z wants meaningful, purposeful work that will help them achieve their goals, not rote assignments disconnected from the context of their lives. For Gen Z, assignments with a clear purpose, connection to the larger goals of the course, and real-world applications are more intrinsically motivating (Hernandez et al., 2020; Mohr & Mohr, 2017; Seemiler & Grace, 2016; Seemiller & Grace, 2019). The two codes from the data that are supported by research are real-

world applications and work that meets students' needs and helps them reach their goals, as shown in Figure 4.

Figure 4

Practical purpose: Codes



Findings

Introduction

The purpose of this study is to identify teacher behaviors and instructional practices that increase student engagement and motivation and reduce boredom and disengagement at the secondary level. Under the framework provided by *self-determination theory*, this study explored how teachers' behaviors and instructional methods support relatedness, autonomy, and competence. Pink (2009) converts competence into a category he terms mastery and adds purpose as a motivational factor. Additionally, Bundick et al.'s (2014) Student Engagement

Core was also used to explore the interconnected elements of the classroom environment, student, teacher, and content.

The initial part of this section presents the findings under the themes of relationships, autonomy, mastery, and practical purpose. These findings answer the question posed in the first research question: What teacher behaviors and instructional practices decrease boredom and distraction in class and increase engagement among Gen Z secondary students? Finally, in response to the second research question, I examined the data specifically looking for how teachers use and manage technology in the classroom. The findings were also examined in relation to the effective use of technology to enhance learning with Gen Z students.

Relationships

Table 1

Relationships: How relationships improve student engagement

Codes	Findings	Quotes
Student-Teacher	● Students look for authenticity, support, and connection. ● Teachers show both academic and personal interest in students. ● Teachers show interest in and passion for the content they teach.	● "Kids tend to care more when they know that they're cared about. They tend to judge a class's value by the value the teacher puts in them." ● "As you go, you get the engagement based on the relationship you have with the student."

- “They’ll tell me they feel safe in my class.”
- “You know us. You know us by name, you know this kid doesn’t turn in homework, but you still love him and care for him.”
- “They don’t care unless you care.”
- “This is a generation that doesn’t want a pure academic experience. They’re used to that social. They’re used to the interactive with other people.”
- “We’ve had conversations about life as well, what their interests are. It goes above and beyond the class, and because of that connection, I feel like they are more receptive in class.”
- “Make boring things engaging by your level of interest.”

		● "I truly believe they are motivated by the engaged educator."
Student-Student	● Students serve as peer leaders. ● Peers offer support to their classmates. ● Social interaction with peers is valued.	● "I think what motivates them is each other more than me. Sometimes I feel like if I put them in groups doing group and cooperative things, sometimes that gets those lower kids to be more motivated." ● "Just hearing praise from their peers" motivates them. ● "You've created a kind of a bond, and they're engaged in the work because of their connection with their teacher and their classmates." ● "There's this environment of they just support each other. They'd all just like applaud for each other."

		● "So even the way I structure the classroom is built to create little communities. There's little pods of four. Each one has a different country. So first off is creating like an identity of this group." ● "But you need each other to learn the information.'
Student-Technology	● Technology is used as an enhancement for learning. ● Balance between technology use and face-to-face interaction must be modeled and taught by the teacher.	● "If it enhances the learning, I will use technology. If it takes away from the community of a classroom, I won't." ● "We don't have to overuse technology but use it specific and purposefully." ● "And so I have to decide, 'Are they going to gain more by using that technology, or is it going to be a distraction from the learning and maybe something that's on paper or in

a group or on a whiteboard would be better?"

- "I think a balanced classroom has a little bit of all that. It has some activities on paper, some of the activities online."
- "And so that seemed to be effective by having that open conversation with them and saying, 'Hey, this is a distraction. Let's help you be successful by putting it away for now."
- "It's a chance for them to learn how to self-regulate, and you do what you can to help them."

In the focus groups, the need for relatedness surfaced as relationships, and the theme of relationships was pervasive in responses to every question. The researcher found relationships to be the launching point for student engagement, and it was through relationships that autonomy, mastery, and purpose flowed. Relationships occurred in three ways: between the teacher and student, among peers, and with technology.

The primary relationship in the classroom was students' relationship with their teachers. Students look for authenticity in their teachers. They want them to be real people who are honest and candid about their own lives and struggles. Teachers' interest in, excitement about, and passion for the content they teach is an important element of their authenticity. When teachers are passionate about their subject, students are much more likely to show an interest in it as well.

Students respond well to teachers who are caring, supportive, and affirming. A Spanish teacher observed, "Kids tend to care more when they know that they're cared about. They tend to judge a class's value by the value the teacher puts in them." Teachers show care by talking to them, asking them questions about their lives outside of school, trying to find common ground with students, giving students their time and attention, and showing an interest in them as individuals, not just as students. When students see teachers as a disciplinarians or judges, they fear getting in trouble and are more reluctant to engage with the teacher or the content they teach.

During the first few weeks of class, when the material isn't as challenging or is a review from the previous year, teachers can dedicate time to building trust and relationships with their students. To build relationships with students, an ASL teacher comments, "I just talk to them. I stand at the door. I greet them when they come in." One teacher spends the first three weeks building trust with students, offering them help and support, and showing them that they can be successful in the class. By forming relationships with students early on, teachers show them that they will help them work through any difficulties they face with their learning.

Once students have settled into the routine that the teacher has set in the classroom, they can continue building relationships with students. The use of humor, often resulting in inside class jokes, contributes to the bond between teachers and students. Once the in-class relationship is established, Gen Z students desire teachers who show an interest in their lives beyond the

classroom, whether it is students' work lives, college applications, events outside of school, or post-high school plans. It is important for teachers to see each student as a unique human being and not just a student. As one teacher states, "Kids learn because they see that they're valued." In return, Gen Z wants to make their teachers proud.

In addition to their relationships with their teachers, students develop relationships with their peers in class. These peers may also serve as leaders, directing activities during cooperative learning and even acting as a proxy for the teacher in a group, at times even correcting students' behavior and mistakes on their work. Peer feedback, such as applauding after a class presentation or being congratulated by their peers for winning a game, also engages students.

The social interaction among students is another key element of engagement. As one teacher comments, "I think what motivates them is each other more than me." Students look to their peers for social interaction and support during their learning. When students work in groups and the teacher facilitates cooperative and collaborative learning in the classroom, student engagement is enhanced. It provides students a sense of support and results in interdependence among their peers. Students also enjoy healthy competition with their peers, particularly during games in class. When teachers create a sense of community among the students themselves, engagement is higher.

Gen Z has benefitted from the vast array of technology available to them. Before using technology in class, teachers must consider its purpose. As one teacher states, "If it enhances the learning, I will use technology. If it takes away from the community of a classroom, I won't."

Gen Z's relationship with technology is different from that of most of their teachers, and it is important for teachers to learn how to harness its power as a learning tool. At times, technology serves as a proxy for a person, teacher or peer, as an instructor of content, assistant in

learning content, or as a social agent, though without the ability to fully replace a teacher or peer. Students learn through short video lessons, games, online quizzes, and much more.

What sets Gen Z's use of technology in the classroom apart from previous generations is their ability to showcase their learning and create products, such as presentations and videos, using technology. Students compile digital portfolios of their work throughout the course that shows their growth and improvement. They take photos of their work to share with their teachers, they play digital games to practice skills and review content, and they use learning management systems as a personal planner to help them organize their learning. It may also be a practical tool to help students find information, read articles online instead of printing paper, sign up for presentation topics, record presentations, and keep up with deadlines.

Teaching and modeling balance in relation to technology is a consistent theme among the participants in the study. Given the tech-rich environment that Gen Z has grown up in, it is important for teachers to model balance. Learning how to self-regulate in relation to technology is a valuable life skill for teachers to include in their courses.

Setting expectations for student technology use and non-use at the beginning of the school year is a critical first step, a finding consistent with Seemiller and Grace's (2019, *Gen Z Learns*) study of Gen Z and Lang's (2020) work on student distraction. Involving students in this process facilitates their buy-in, particularly when teachers explain the research and consequences of being distracted by digital devices in class. Teachers who understand that technology is integral to Gen Z students' lives work to integrate it into their classrooms in healthy, productive, and innovative ways. Setting a clear tech-use policy early on, maintaining it throughout the year, and modeling a healthy relationship with technology will help students learn how to balance the dual digital and physical worlds that they live in.

Autonomy

Table 2

Autonomy: Classroom practices that encourage student autonomy

Codes	Findings	Quotes
Choice/ options	● Teachers support students' autonomy by providing learning activities that meet individual students' needs and connect to their interests. ● Choice includes enrichment activities and activities that are in students' preferred learning styles.	● "I'm giving them a sense of choice as to what they do [research]." ● "We're still accomplishing my goal, but I'm giving them a choice as to what they study and how they present it." ● "They're doing all the skills, but in a topic they're interested in." ● "We use Canvas. And so if you have those activities set up, some kids can go through those easily. Then, if you give them enrichment activities, some kids go ahead and do the enrichment activity. But I think that gives them some

		autonomy, especially when you give them options." ● "That was my teaching style as well, just meeting the needs of all learners." ● "You want feedback from them like what is the best style of learning?" ● "It's almost Montessori in the sense of what do you like? Present it in any way. I don't care if you use Canva or Google Slide or write a song. Do what you want to present it."
Self-direction	● Students have some control over the pacing of the course. ● Students direct their own learning. ● Routine is key to self-direction.	● "And I think a balanced classroom has a little bit of all that. It has some of the activities on paper, some of the activities online, and that also gives them a little bit of freedom, you know, to move

ahead if they want to move ahead."

- "I want to say I want to provide them with the resources and give them the ability to work things out and have that ability to make mistakes, like making sure that they know it's okay."
- "Let them work on their own."
- "I like to give them checklists on what to do on independent workdays. So they're working like on an independent presentation. I will give them a like, you need to accomplish these things in this order. Here's some reminders. And then I just kind of walk around and can support them on it."
- In collaborative groups students "depend on each other. And sometimes kids like

that independence. And I think that helps enhance the learning."

- "I start my class with a one-minute countdown. I'm watching my kids hang out, their earbuds and their devices away in their bags or in their pockets. And it helps them be ready. I actually say thank you for putting away your technology and then we move on."
- "They'll come into the classroom. They'll have a warm up on the screen. I don't have to tell them to get started on it. So you don't have to wait on me to get the class started while they're already starting on their warm up on their own."

		● "If you're talking about autonomy and being able to produce something like you have a very consistent lab structure means that they slowly get better and better at understanding what you're looking for."
Student leadership	● Students are creators and producers of content. ● Students lead their peers during learning activities.	● "Sometimes a student will tell another student, 'Hey you gotta get to work,' or 'Hey, we're about to share.'" ● In student groups, "you're an ambassador, you're a secretary, you're a president, and you're a vice-president." ● "So you've got about 10 minutes to read the articles, what you find, what you leave, you get to present to those in the group."

- "They do lots of signing in class each day, and all the time they sign partners, they sign in groups."
- "By the time it came to creating an actual brochure for a different project, that ability or that door was open to technology where they could use the skills that they know using Canvas, using the Google Slides or Google docs."
- "And my favorite thing with enhancing technology is allowing them to produce and create and see what they could do."
- "I still do a digital portfolio where my students have to keep track of not just their final projects, but they have to put in their progress of photos

	of a piece that they're working on." ● "Every year we have the kids create 3D objects with felt." ● They write "football poems, football arguments, football short stories."

Focus group participants referred to choice as "perceived autonomy" and "the illusion of choice." The choices presented by teachers related to a singular goal, but students had some level of choice in how they achieved that goal. In one case, the teacher's goal was review, but different ways to review were offered, including individual review of class materials on their own. Choice is offering students different ways to complete learning tasks, not giving them the option not to do the work. Teachers also mention making it undesirable for students not to engage. This "illusion of choice" gives students some control over their work.

Teachers presented choices to students in a variety of ways. Choice always falls within the context of the goal of the assigned task. Project-based learning offers students different modalities in a preferred learning style. Students choose topics from a list but can request to pursue a topic of personal interest that meets the requirements of the assignment.

Being able to connect a topic of personal interest to what they are learning increases their engagement significantly. Teachers look for a connection between their content and students' daily lives and then incorporate it into students' learning tasks. In English, students write poems, arguments, scripts, and short stories on topics of interest. They may research historical figures that appeal to them or create a travel brochure about a place they would like to visit. Creating a

piece of art with their favorite candy or soft drink makes the assignment more appealing, even to those who do not consider themselves artistic.

Students also choose how to present their learning. The ability to use a modality (for example, written, visual, or auditory) that they are comfortable with appeals to them, and with the technology available, there are a plethora of options. One teacher said, "We're still accomplishing my goal, but I'm giving them a choice as to what they study and how they present it."

Within activities, students may have options. In Quizlet, students can choose which activities they prefer to learn vocabulary. Others offer enrichment activities to those who complete work quickly. Some teachers use stations to provide learning that meets students' needs in that moment and that allows them to focus on a skill they need to work on. One participant noted that online activities give students "a little bit of freedom to move ahead if they want."

Teachers offered students a variety of ways to direct their own learning. One teacher offered students a number of resources to help them reach the learning goals she set to "give them the ability to work things out." Those resources include online modules, reference materials, and even posters in the classroom. Another teacher offers students independent work days. Students are given a checklist with tasks that they need to accomplish. The teacher circulates through the room offering support to students on an as-needed basis. In some cases, students were offered the opportunity to work through modules at their own pace.

Routine is a key aspect of self-direction. Within the first few weeks of school, teachers establish a routine with their students. Once students know the routine, then they are able to direct themselves in familiar situations. Students automatically put phones away when the teacher puts on the one-minute timer at the beginning of class, students start the warm-up

without being prompted, students know what to do during a science lab, and students read and follow directions to assignments on their own.

Student leadership was another indicator of autonomy. Partner work, cooperative learning, and collaboration were mentioned frequently. In collaborative groups students "depend on each other. And sometimes kids like that independence. And I think that helps enhance the learning." A Spanish teacher purposely groups students in pods of four, and each student has an assigned role within the pod. They are either assigned a topic or choose a topic. Once they learn about the topic, they teach it to each other.

Mastery

Table 3

Mastery: Practices that lead students to mastery

Codes	Findings	Quote
Optimal challenges	● Teachers should start with what students already know and build on it. ● Teachers should model activities that are designed to challenge students. ● Challenge should be connected to students' interests. ● Students must be able to see their progress on challenging	● "Kids want to be challenged." ● "I also try to challenge them and say, maybe this isn't a subject that you like, but try to approach it as just learning something new. Think of it as the fact that you've challenged yourself in life and then move on to the next challenge." ● "They were engaged because

	activities.	it was something of interest to them." ● "You help them see that any topic that they're interested in can work with the skill. Just because it's something that they're interested in doesn't mean that it can't be high level." ● "I do everything I ask my kids to do." ● "Some things you are going to have to model. And then as they grow and they're independent, they know that they should be working on their own." ● "And you've got to review it and support them and congratulate them when they actually do something well and challenge them, even if something is incorrect. It's

		okay to make mistakes." ● "I actually show them what an A project looks like, what a B project looks like, what a C project looks like, and a D project. ● "Scaffolding is what I do. I give them all the feeling words that we just learned or whatever it is for the topic, and we just kind of build from there."
Positive feedback	● Students want feedback that helps them see their growth and makes them feel competent and successful. ● Students like praise from peers. ● Success at performing a skill is a form of feedback.	● "You start basic, but then you've got a scaffold that you've got to go up. You've got to give them something new. Then you've got to come back down. And you've got it review it and support them and congratulate them when they actually do something well and challenge them."

		● Students “look for ways that they could kind of excel around their friend groups or their other classmates.” ● They are motivated “just hearing that praise from their peers.” ● “The fact that they can tell someone, ‘I was a winner in this.’” ● “Some things you are going to have to model more for them. And then as they grow and they’re independent, they should be working on their own.” ● “Success is addictive.”
Opportunities for growth	● Effective feedback provides students with opportunities for growth. ● Self-reflection helps them see their own growth.	● ““The more we practice, the better you’re going to get at it.” ● “This is a message I’m trying to portray with the language.

	And then how can I get it better. It's not always perfect, but it gives them a sense of like, okay, I can do this. And it's okay if I make mistakes, and I'm just going to keep going." • "If it's a major project, they have to write me a six-sentence minimum paragraph of what they learned from that process. And what is one thing they would change about it if they had to do it over again."

Teachers note students' desire to be challenged. A Spanish teacher comments, "They want to be challenged." A wide variety of teaching strategies and activities keep students engaged and challenged. When content is not challenging, boredom sets in and students disengage. In addition to their content, teachers comment that they teach students how to persevere through challenging content. They ask students to challenge themselves to try something new, to persevere through new learning so that they know that they are capable of mastering challenging tasks. Another approach is to connect challenging content to students' futures and planting the idea that they may use these new skills in the future. Teaching students

how to approach and manage challenge is a key element of helping students engage in more rigorous learning tasks.

Students' desire to be successful is fueled by their teachers' support of their learning. An art teacher comments, "I do everything I ask my kids to do," oftentimes doing it live in front of students. Such modeling allows students to see the teacher making mistakes, and pointing out those mistakes to students helps them understand that they do not need to be able to perform a skill perfectly. In an ASL class, the teacher initially models the signs for individual words and phrases. As the lesson progresses, scaffolding helps students use those signs first as singular signs, then in sentences, and finally in a back-and-forth conversation with the new signs that were modeled initially. A special education teacher notes, "Some things you are going to have to model. And then as they grow and they're independent, they know that they should be working on their own." By modeling activities that they ask students to complete, teachers build students' confidence in their ability to achieve mastery, which also leads to the students' ability to work more autonomously.

When teachers present students with a challenging activity, connecting it to their interests and an area where they already feel successful builds competence. An English teacher describes the types of writing that students complete, and students are allowed to connect those assignments to their interests, noting, "You help them see that any topic that they're interested in can work with the skill. Just because it's something that they're interested in doesn't mean that it can't be high level."

Feedback is critical in developing students' feelings of mastery. Students receive feedback from both teachers and peers. They also give feedback to teachers, peers, and even themselves.

Teachers provide feedback in multiple ways. When students work in small groups, teachers have the opportunity to provide more private and more individualized feedback. As a science teacher notes, “Let me engage you as a person individually and that more consistently brings out success.” Providing students with feedback one-on-one or in a small group produces the best results. It also fosters a positive, encouraging relationship between the teacher and students.

Seating arrangements were another aspect of building competence. When students are seated in groups, they learn from one another by teaching each other or asking questions to clarify their learning. An art teacher utilizes the arrangement of student seating in the classroom as a way to provide competence-building feedback. The horseshoe arrangement with the teacher in the middle in the art classroom provides the opportunity to spend time individually with students as they work on their art. Students are also allowed to sit together depending on where they are in a project, with students at the same stage sitting together to offer one another support and feedback.

The connection between autonomy and competence is seen through the independent work days that the ASL teacher provides. Once students have been instructed about their work expectations for the day, the teacher “walks around and can support them” on their work. Students are able to focus on their learning needs and do not have to worry about keeping up with the class if they are behind or getting bored if they are ahead.

Peer feedback is also important. Students want to look successful in front of their peers. Winning games and being congratulated by peers are important to students. According to a Spanish teacher, students seek peer approval. Peers also provide feedback to their classmates about their behavior, and teachers report how helpful it is when a student steps up to correct a

classmate. As a Spanish teacher states, students are motivated by peer praise and they "look for ways that they could kind of excel around their friend groups or their other classmates."

Self-feedback is another strategy that teachers use. An art teacher has students draw themselves and then write negative things about themselves. The next day students write themselves a letter and address their own negative comments. Throughout the year, they return to the letter, and at the end of the year, they reread all the letters they have written. The process of critiquing themselves and reflecting on those critiques at the end of the year helps students see their successes and their growth. The creation of a year-long digital portfolio is another strategy employed to show students their progress. When they reflect on their work and see their progress over the course of a year, their confidence grows in their ability to master challenging material.

Finally, as a science teacher states, "Success is addictive." Students want to be successful, and experiencing success increases their engagement. According to a Spanish teacher, students want to make their teachers proud of them, and they want to excel in the presence of their classmates and friends.

Teachers have many strategies that they use to build students' mastery of the material they study. Multiple teachers mention the use of modeling as a way to show students what both success and failure look like. Once students see what the teacher expects, they have a better understanding of the teacher's expectations and a clearer path to success. The "I do, we do, you do" model gradually removes supports for students so that they can do the work on their own.

Another common theme was scaffolding. As a Spanish teacher observes, "When you teach a subject that builds one upon the other, you start basic, but then you've got a scaffold that you've got to go up. You've got to give them something new. Then you've got to come back down." Inherent in the scaffolding process is allowing students to make mistakes along the way.

Chunking was another oft-mentioned strategy. Breaking the material down into smaller, more manageable chunks makes it easier for students to understand and follow along while also asking students to complete a certain task by the end of the day.

Repetition also builds competence and leads to mastery. A Spanish teacher holds that repetition provides students with "different ways to see the topic." When the teacher presents the topic often and in different modalities, the students will be more comfortable on the final assessment because they will have seen and experienced it so many times.

Other teachers mention stations as both an effective review strategy and as a way to differentiate students who are at a different phase in a project, which also feeds into the idea of autonomy.

Students enjoy games and the resulting competition when they review material. In discussing the use of games to review previously taught material, a special education teacher notes, "I wanted them to feel successful and I wanted them to have fun while they were learning." Using digital game tools like BlookIt and Jeopardy to review increases both motivation and feelings of competence when students can declare themselves the winner.

Finally, any sort of cooperative learning activity builds students' competence and leads them to mastery. Activities in groups, such as discussing a topic with peers or writing with peers, enable students to reach mastery. Placing students intentionally into groups, assigning each student a role, and giving students ownership of their learning fosters mastery as well.

Cooperative learning activities also can help students who do not have a firm grasp of the material learn from their peers who do. One teacher creates groups and then assigns one teacher helper per group. Another teacher uses small groups as a way to provide "mini lessons," which

improves students' sense of competence and builds their confidence. As a Spanish teacher notes, collaborative learning "helps enhance the learning."

Practical Purpose

Table 4

Practical Purpose: How purposeful work improves engagement

Codes	Findings	Quotes
Real-world application	● Students prefer meaningful work that applies to their lives outside of school. ● Students shun busywork or menial work.	● "If it's not something that they're personally connected to, they don't see that interest to keep going with it." ● "I think they have the ability to see the value in the education, but it has to be real life and applicable." ● "I always do evaluations at the end of the year. They're like everything we did, had a purpose. I knew why I was doing what I was." ● "If they don't see immediate value to it, it's harder for them

		to find that motivation as well." ● "When they start seeing connections to stuff that they like to hear about, then they are definitely more motivated to give more into the material." ● "I think they get bored when it's seen as kind of a menial, busywork not applicable to what we are studying."
Work that meets students' needs	● Students are more engaged when the work they are doing meets an external need.	● "Why do I need this? How it's gonna help me? How am I going to use this in the future? And if it's not within something that hits their bullet points for their life plans in the future, sometimes they don't feel as inclined or as motivated in that subject area." ● "I think what motivates

	students is their interest." ● "I'd have to agree there are interests or what they need from a situation. You know, do they need a passing grade to play sports. Or do they need a grade because they need a GPA that's what their target is? Or do their parents say they need this kind of grade to get this? So sometimes they are motivated by what they can get out of it." ● "I try to make that connection to the future. Maybe you won't use this now, but maybe in the future there's going to be some need for you to use this."

Students prefer meaningful work that applies to their lives outside of school and that connects to their future lives. They disengage when presented with work that they see as menial or busywork. With personalized entertainment available to students on their electronic devices, students must see the value of what they are doing; otherwise, they lose interest quickly.

Teachers can create meaning by connecting work in their disciplines with students' interest, encouraging students to write, research, or present on a topic of interest. A Spanish teacher notes, "If it's not something that they're personally connected to, they don't see that interest to keep going with it." Students must see the "immediate value" of the work they are doing. One teacher, discussing students in advanced academics classes, observes, "I think they have the ability to see the value in the education, but it has to be real life and applicable." Students need to understand the "why" of an assignment, such as practicing material that will be on a test or exam. Additionally, "When they start seeing connections to stuff that they like to hear about, then they are definitely more motivated to give more into the material." Students want to learn material that can be applied to real-life contexts, such as communicating in another language.

Purpose was also an important factor in technology use. A Spanish teacher states, "We don't have to overuse technology, but [we need to] use it purposefully and specifically." While technology gives students skills that are useful, teachers do not perceive that technology is inherently better. One teacher notes, "Technology doesn't always assist them in learning."

Finally, students are more engaged when the work they are doing meets an external need. The teacher may stress the need to do work in order to pass a test or exam. Their families may desire certain outcomes from them. Other students may work to pass so that they can play sports. Other students work hard to earn a grade that helps their GPA or improves their class rank. Learning for them can take on a transactional nature, and they need to know what they can get out of it.

Technology

This section discusses the findings as they relate to the second research question" How can technology be used to enhance engagement without increasing distraction among Gen Z students? Technology was a pervasive presence in every aspect of engagement. Students have a relationship with technology that can serve as a proxy for their relationships with their peers and their teachers. At times, online lessons or videos serve as substitutes for teachers.

At the same time, technology serves as a social tool, often used by students to interact with their peers. During class, students may resort to technology for a brain break, sharing a humorous video or meme that they found online with their peers and even the teacher.

In every focus group, teachers discussed the need to teach students how to balance their use of technology with face-to-face interactions. Teachers agree that boundaries set in the first few days of class are necessary to help students learn how to manage technology. Regarding technology as a teaching tool, one teacher notes, "If it takes away from the community of the classroom, I won't do it," noting that technology must have a specific purpose for it to be included in the lesson. Another teacher does not use technology for the initial presentation of material; instead, it is used for reinforcement and practice.

Technology enhances student autonomy. Teachers may present students with a variety of resources that they can choose from to learn or review content. It may also give them ways to present their learning that reflect their learning style or that are more comfortable for them. According to one teacher, online activities give students "a bit of freedom to move ahead if they want to move ahead," which allows for the self-pacing that Gen Z values. Choice allows students to choose an option that best matches their preferred learning style. A special education teacher comments that by understanding every learner's unique learning style, teachers help everyone achieve success. Another teacher asks students to present their learning via videorecording,

noting that students are able to show "their best effort instead of showing me their nerves." According to this teacher, the success rate for video presentations is much higher for this teacher than live presentations in front of the entire class.

Technology promotes mastery. Teachers speak of employing a variety of tech tools that give students different ways to practice content. Another teacher presents new material using paper and pencil and then uses technology to practice and reinforce the learning. In particular, games engage students by their competitive nature through games either made by the teacher or an external source. Programs like Kahoot, Gimkit, Blookit, Quizziz, and Quizlet help students review material. As one teacher comments, "I wanted them to feel successful and I wanted them to have fun while they were learning." The competitive aspect of game-based learning allows students to feel like they are winners. As one teacher states, students want to "excel around their friend groups or their other classmates." Online teaching tools, such as EdPuzzle and Canvas quizzes, help students see their progress. One teacher mentions using technology as "assessments just to see where they were on a subject." In this way, teachers use technology to evaluate the effectiveness of their own teaching before they present students with a summative assessment.

Technology also serves many utilitarian functions. Canvas, a learning management system, is where assignments and presentations are housed, providing students with easy access. One teacher uses it to save paper by not printing articles that they can read online and for electronic sign-up sheets. Content is also presented via technology. Students use it to reference information quickly, to research, to watch videos, and to read articles published online.

Academically, teachers comment that they use it for students to take pictures of their work and to create digital portfolios. Students write in Google Docs and create presentations in Google Slides. One teacher makes QR codes to provide students with quick access to a link.

Virtual tours, music videos, online games, and online teaching tools were all mentioned as ways that teachers utilize technology as a teaching tool.

Technology fosters students' ability to create products that demonstrate their learning. One teacher views technology as a tool that allows students "to produce and create and see" in ways that traditional pen-and-paper activities don't allow. Students create digital portfolios, videos, digital brochures, and visual presentations to showcase what they have learned.

The overarching theme of technology use that emerged from the focus groups is balance. In their view, technology is both a practical tool that makes some of the more routine aspects of teaching easier (not printing articles) as well as a way to enhance learning by engaging students in fun, competitive review games; providing more visual forms of learning through videos and presentations; and giving students a range of tools that facilitate the creation of products that showcase their learning. To mitigate the distractions that come with the inclusion of technology in the classroom, teachers involve students in a discussion about technology use at the beginning of the year. They spend the first few weeks of school establishing expectations around when technology is permitted and when it is not. One teacher uses a visual, one-minute countdown. During this time, the teacher takes attendance while students put their earbuds and devices away, noting "You're coming in where they don't battle it" because they know that "this is our process." When not using technology, one teacher notes that it is important to keep students' hands busy. Using a variety of activities to engage students throughout the class period, with some that include technology, tends to reduce the temptation to use technology during non-tech activities. As one teacher observes, "students are so used to using technology. They really need to use technology, almost as a break from pen and paper. And I think a balanced classroom has a little bit of that." Some teachers offer brain breaks during which they allow students to check

their phones. Modeling appropriate technology boundaries by not using it at inappropriate times in front of the students is another way to teach when it is appropriate or not appropriate for students to use technology. As one teacher comments, "It is a tool that they're going to have to know how to use." By teaching students both how to use technology as a learning tool and how to self-regulate while they are using it, teachers can successfully integrate technology into their courses, taking advantage of the many benefits that technology brings while mitigating the distraction that unregulated technology use can cause.

Gen Z

An unexpected finding was that the teachers in the study acknowledged generational differences unprompted. Participants framed many of their comments with a discussion of generational differences from the one that they are a part of. One teacher notices that "they don't respond the same way anymore." Another has noticed how much harder kids work for teachers they like, which is a shift from the teacher's earlier days in the classroom. In discussing how technology is used in the classroom, one teacher comments that technology enhances what they do in the classroom because "they are so used to using technology."

Teacher transparency is a quality that Gen Z values in their teachers. One teacher observes that this generation of students values candidness while also noting that teachers should try to filter their comments and not be too open about their opinions. In one teacher's experience, "This is a generation that doesn't want a pure academic experience. They're used to that social. They're used to the interactive with other people." Over this same teacher's career, teaching has become "a lot more relational," commenting that "with this generation, you cannot teach them unless they know that you care for them."

Gen Z experiences learning very differently from previous generations. The availability of technology, along with students' relationship with it, has created a very different learning experience than many of their teachers have had. Given the ubiquitous access they have to visual forms of information, students have become visual learners (Rothman, 2016), with one teacher observing that "the visual aspect on the computer was much better than if I had given them some books to read." The social nature of Gen Z has made the student-teacher relationship a top priority for students. The ease with which they can access information has made it imperative that learning activities have a practical purpose and a real-world application. Teachers who pull the yellowed copies out of the file cabinet and present the same lessons that they have been giving for decades see themselves as content experts and information transmitters and who show little interest in students as individuals will not be successful teachers, regardless of how well they know their content. As students have evolved, so must teachers. The professional development program that follows is intended to provide teachers with the tools to engage students in ways that speak to Gen Z's particular needs for relationships, autonomy, mastery, and practical purpose.

Limitations to the Research Approach

The small sample size is a potential limitation of the research approach. A larger group of teachers from more than one district may have provided a richer data set to work from with a greater variety of perspectives with teachers from different disciplines and with varying levels of experience. While the results of the focus groups are true for these teachers in their district, I can only surmise that they may be accurate for other teachers in different teaching contexts.

The research site is an affluent, suburban high school with a much higher than average income as compared to the rest of the state. Teachers at Wolf Run High School, a pseudonym for

the school, are generally experienced, and achievement data well outpaces state data. The teachers in the study work with students who are largely middle class or higher and who have had access to all the educational advantages that affluence brings.

While these limitations should be taken into account, the findings of this study were pertinent to the topic at hand. These teachers' experiences can be extrapolated to the wider teaching population. The consistency of responses among the two focus groups and two individual interviews adds to their relevance. The marked alignment of the responses from the participants and the tenets of self-determination theory reinforces their relevance. Though they are all from the same school, the size of the school and teaching staff provided diverse perspectives from teachers in a variety of disciplines.

Conclusion

My goal was to use the results of my study to create a practical product that would help teachers create an environment that would improve student engagement in their classrooms. In my study, I identified the best practices that teachers can use to engage students. Data collected was categorized using self-determination theory and the accompanying basic psychological needs for autonomy, competence, and relatedness that are at the core of SDT. Data from focus groups and interviews was analyzed using thematic analysis, and the training program that follows in Artifact III proposes concrete, practical ways for secondary teachers to effectively engage this generation of students

Artifact III

Implementation of solution

https://sites.google.com/view/studentengagement101/home

Introduction

To address the issue of student engagement in the era of digital distraction, a training program was created and is available online through a Google Site that I created. The program guides secondary teachers through three parts. Teachers will start with background learning on self-determination theory and Gen Z. The RAMP (relationships, autonomy, mastery, practical purpose) Up Engagement acronym was created to present the findings of this study in a teacher-friendly format. Finally, teachers will choose a final product to represent their learning from a list, with the option to create their own project.

RAMP Up Student Engagement

Part I: Preparing to climb: Self-determination theory and Gen Z

Teachers will complete this section of their training on their own before coming together as a group in Part II of the training. A training manual for notes and reflections will be provided. In this part, teachers will receive background information in self-determination theory, learn about types of engagement, and explore the Student Engagement Core, particularly the relationships between students and teachers.To help them reflect on the ways that they were taught, they will complete a learning experiences survey in which they will answer a variety of questions about their experiences in the classroom as a student. Following the survey, they will watch a video created by the researcher about Gen Z: who they are, how they learn, and what types of assignments work best for them. Results of the survey will be provided, and teachers will reflect on the differences in their own results, the results of the group, and the learning style and experiences of Gen Z. Throughout this portion of the training, teachers will take notes and reflect on their work in a workshop manual entitled *Engaging Gen Z*.

Participants will complete the modules below on their own:

1. Video on self-determination theory

2. Graphic: Types of motivation
3. Graphic: Student Engagement Core
4. Learning Experiences Survey - Google Form
5. Video: Gen Z

Part II: On the ramp: Relationships, autonomy, mastery, and practical purpose

Links to videos

R = Relationships

AM = Autonomy & Mastery

P = Practical Purpose

Once participants complete the preparation work in Part I, they will proceed to Part II. This part will present the results of my study through videos under the title RAMP (Relationships, Autonomy, Mastery, Practical Purpose) Up Engagement. Participants will watch the videos together in small groups, which could be academic departments, grade levels, interdisciplinary groups, or some other combination. They may divide the videos up into smaller sessions, perhaps one or two at a time, or use a significant chunk of an in-service day to complete all four videos and discussions.

Participants will use their training manuals throughout this section to complete reflection questions, take notes during the videos, and answer discussion questions. For each video, participants will complete reflection questions about their prior experience as a student with the topic, which they will discuss in their small groups before they view the video. They will make note of strategies that they find useful during the video. Afterwards, they will discuss ways that they can improve in the topic area using information from the videos.

Once the group has completed all four videos and the accompanying questions and reflections, they will participate in a final group discussion using the questions below:

1. How have classroom learning and student engagement changed since you were a student? How has it stayed the same?
2. How have you changed as a teacher over the course of your career?
3. How can you help students achieve a better relationship with technology?
4. How can you direct students' use of technology to foster autonomy in their learning?
5. How can technology help students demonstrate mastery and feel more competent and confident in their level of mastery?
6. How can you teach students to use technology purposefully?
7. What adjustments will you make in your "classroom ecology" to meet the learning needs of Gen Z?

Part III: Implementation: Ramping up student engagement

Finally, each participant will choose a way to demonstrate their learning and to assist them as they implement their learning in the classroom. They may choose one of the options below or design their own final product.

1. A plan to build relationships, autonomy, mastery, and practical purpose into a unit
2. Goals in all four areas to be shared with a colleague, supervisor, chair, district staff
3. Adding the four engagement measures to a curriculum map
4. A plan to set the tone with RAMP during the first month of school
5. A journal with #howitstarted and #howitsgoing to document teacher progress in the area of motivation
6. A participant-designed product

Implications for Practice

Through the professional learning program that I created, teachers will arrive at a better understanding of Gen Z. Teachers from previous generations will consider how they were educated versus how Gen Z learns. By focusing on building strong relationships in the classroom, nurturing student autonomy, providing ways for students to show their mastery of their learning in a preferred format, and assigning work with a purpose, participants in the training program will be able to more effectively create classroom environments that engage Gen Z more fully. Additionally, they will learn about the importance of helping students set healthy boundaries with technology in their classrooms so that they are reaping the benefits of the array of technology available to students while minimizing the distractions that may accompany it.

Future Research

Every generation of learners comes to the classroom having grown up and been educated in a unique historical and educational context. Educators are continually learning, adapting, and adjusting to new generations of learners. This study applies Ryan and Deci's (2000, 2020) self-determination theory specifically to Gen Z and their engagement in the classroom. With the Alpha Generation poised to succeed them and already populating the early years of middle school, future research should consider investigating how to motivate and engage this newest generation of learners, particularly with the rise of Artificial Intelligence.

As students emerge from the pandemic and months or years of online learning, studies should be conducted on the impact of the COVID-19 pandemic and the time learning online as they relate to student engagement, particularly given the significant role that technology played in educating Gen Z during the pandemic. While educators developed new ways of utilizing technology to teach during the pandemic, the need for balance between more traditional forms of

teaching and learning and technology-based learning was a prominent theme in the data collected in this study. Participants also emphasized the important role that relationships with the teachers and their peers play in engagement, a facet of the engagement puzzle that was significantly impacted by at-home and virtual learning during the pandemic. Students were often required to be quite autonomous with their learning during the pandemic, and mastery levels continue to show decline since students returned to school in person (Di Pietro, 2023; Kuhfeld et al., 2022).

Another area for research is working with teachers in teacher preparation programs on the best way to engage students. Often educators revert to what Lortie (1975) calls the *apprenticeship of observation*, a term that refers to teachers' inclination to rely on their experiences as a student as a type of teacher training (Lortie, 1975, as cited in Hammerness et al., 2005). Teacher preparation educators should help aspiring teachers transition from the role of student to the role of teacher, an evolving process that involves exposing them to what motivates and engages the generation of students who will populate their classrooms.

Engagement continues to be key in the realm of education. Of particular concern is the high number of teachers leaving the classroom for non-school related professions. Future research may explore how using Ryan and Deci's (2000, 2020) self-determination theory could improve teacher motivation, engagement, and ultimately, retention in the classroom. Engaged teachers make engaging teachers, and state, district, and building leadership's ability to promote teacher autonomy and competence while developing strong relationships with students is critical to retaining a strong teaching workforce. State-mandated tests; legislation in some states that prescribes what teachers can and cannot say in the classroom; more rigorous accountability measures; and teacher evaluation systems that are often perceived as ineffective and at times, punitive have impacted teacher engagement. Furthermore, tying student performance on high-

stakes tests to financial rewards seems contrary to the tenets of autonomy, competence, and relatedness. Research shows that rewards actually cause a decrease in motivation (Kohn, 1993; Pink, 2009).

Summary

Despite research, the introduction of a plethora of educational technology tools, and new teaching methods designed to bring education into the 21st century and modernize education, students remain bored and disengaged (Brenneman, 2016; Furlong, 2021; Holquist et al., 2020; Quaglia Institute for Aspirations, 2013; Yazzie-Mintz, 2007). Gen Z and the upcoming Gen Alpha have grown up in a very different world than their predecessors. Furthermore, under current legislation, students in these generations have been required to take many high-stakes tests throughout their time in school, which has impacted their education by focusing on developing skills that prepare them for standardized tests instead of knowledge about the world they live in (Markowitz, 2018; Mora, 2011; Wexler, 2019). An intense focus on skill development and testing has left students disinterested and disengaged and taken time away from a rich, relevant curriculum (Markowitz, 2018), which this study shows is one of the key elements of an engaging classroom. Finally, the integration of digital devices into nearly every facet of students' daily lives has created the challenge of capturing students' attention away from digital distraction (Lang; 2020; McCoy, 2020; Seemiller, 2017; Seemiller & Grace, 2019).

The purpose of this study was to identify teacher behaviors and instructional practices that increase student motivation and engagement and reduce boredom and disengagement at the secondary level. With Ryan and Deci's (2000, 2020) self-determination theory serving as the theoretical framework, this study examined how teachers' behaviors and instructional practices impacted students' feelings of autonomy, competence, relatedness, and sense of purpose.

Additionally, these findings were linked to the research regarding the characteristics and learning preferences of Gen Z (Cilliers, 2017; Hernandez-de-Menendez, 2020; Madden, 2018; Mohr & Mohr, 2016; Nicholas, 2020; Rothman, 2016; Seemiller & Grace, 2016; Seemiller & Grace, 2019). This qualitative study was performed via a semi-structured interview protocol in focus groups with secondary teachers on Zoom. Thematic analysis was used to analyze the data collected. Initially, it was categorized according to the three basic psychological needs in Ryan and Deci's (2000, 2020) self-determination theory: autonomy, competence, and relatedness. Pink's (2009) category of purpose was added to the themes, and during the process of data analysis, these categories were renamed to reflect their use in a classroom, resulting in the acronym RAMP (relatedness, autonomy, mastery, and practical purpose). In the end, this study's aim was to bridge the proverbial generational divide between teachers, who are largely not part of Gen Z, and their Gen Z students.

Conclusion

Technology has radically changed both how we live and how we teach. Gen Z is the most connected generation to date. With handheld devices that provide instantaneous information and personalized entertainment, it is more important than ever to explore the best ways to engage them. No matter how personalized a device is, it cannot replace face-to-face relationships with teachers and peers. Students' phones and computers afford them an unprecedented level of autonomy, and they expect to be able to learn with a degree of autonomy. Feelings of competence increase their motivation and their desire to continue learning, and assignments with a practical purpose and real-life application engage Gen Z.

Teachers are no longer authority figures who are the source of all wisdom about their content area. Those who try to control Gen Z students will be met with resistance. Gen Z shuns

work without purpose that does not build both their competence and confidence. The students in today's classrooms have been formed by the changes in the world around them, and teachers must adapt to meet the needs, hopes, dreams, and desires of Gen Z, which may be vastly different from the ones that they had as a student. Those who teach Gen Z students will engage students by forming strong relationships with them, helping them build relationships with their peers, teaching them how to balance technology use and face-to-face interactions, providing them with age-appropriate levels of autonomy, fostering a sense of competence, and giving them work that matters.

References

Amabile, T. M., DeJong, W., & Lepper, M. R. (1976). Effects of externally imposed deadlines on subsequent intrinsic motivation. *Journal of personality and social psychology*, *34*(1), 92. https://doi.org/10.1037/0022-3514.34.1.92

Barbalet, J. M. (1999). Boredom and social meaning. *British Journal of Sociology*, *50*(4), 631–646. https://doi.org/10.1080/000713199358572

Barnes & Noble College. (2016). Getting to know Gen Z: Exploring middle and high schoolers' expectations for higher education. Retrieved from https://www.bncollege.com/wp-content/uploads/2018/09/Gen-Z-Report.pdf

Bond, M. (2020). Facilitating student engagement through the flipped learning approach in K-12: A systematic review. *Computers & Education*, *151*, 103819. https://doi.org/10.1016/J.COMPEDU.2020.103819

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, *3*(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

Brenneman, R. (2016, March 22). *Gallup student poll finds engagement in school dropping by grade level.* Education Week. Retrieved January 16, 2022, from https://www.edweek.org/leadership/gallup-student-poll-finds-engagement-in-school-dropping-by-grade-level/2016/03

Bryson, C., & Hand, L. (2007). The role of engagement in inspiring teaching and learning. *Innovations in Education and Teaching International*, *44*(4), 349–362. https://doi.org/10.1080/14703290701602748

Bundick, M. J., Quaglia, R. J., Corso, M. J., & Haywood, D. E. (2014). Promoting student engagement in the classroom. *Teachers College Record*. https://doi.org/10.1037/e667122011-001

Cheng, L., Ritzhaupt, A. D., & Antonenko, P. (2019). Effects of the flipped classroom instructional strategy on students' learning outcomes: a meta-analysis. *Educational Technology Research and Development, 67*(4), 793–824. https://doi.org/10.1007/s11423-018-9633-7

Cheon, S. & Reeve, J. (2015). A classroom-based intervention to help teachers decrease students' amotivation. *Contemporary Educational Psychology, 40*, 99–111. https://doi.org/10.1016/j.cedpsych.2014.06.004

Cilliers, E. J. (2017). The challenge of teaching generation Z. *PEOPLE: International Journal of Social Sciences, 3*(1), 188-198. https://dx.doi.org/10.20319/pijss.2017.31.188198

Cleaver, S. (Mar-Apr 2008). Smart & bored: Are we failing our high achievers? *Instructor, 117*(5), 28-32. Retrieved from https://files.eric.ed.gov/fulltext/EJ792959.pdf

Corso, M., Bundick, M., Quaglia, R., & Haywood, D. (2013). Where Student, Teacher, and Content Meet: Student Engagement in the Secondary School Classroom. *American*

Secondary Education, 41(3), 50–61. http://www.jstor.org/stable/43694167

Creswell, J. W., & Guetterman, T. C. (2019). *Educational research: Planning, conducting and evaluating quantitative and qualitative research*. Pearson.

Davis, H. A. (2006). Exploring the contexts of relationship quality between middle school students and teachers. In *Elementary School Journal* (Vol. 106, Issue 3, pp. 193–224). https://doi.org/10.1086/501483

Deci, E. (1995). *Why we do what we do: Understanding self-motivation*. New York: Penguin Books.

Deci, E. L., & Cascio, W. F. (1972, April). Changes in intrinsic motivation as a function of negative feedback and threats. Presented at the meeting of the Eastern Psychological Association, Boston.

Deci, E. L., & Flaste, R. (1995). *Why we do what we do: The dynamics of personal autonomy*. GP Putnam's Sons.

Deci, E. L., Koestner, R., & Ryan, R. M. (2001). Extrinsic rewards and intrinsic motivation in education: Reconsidered once again. *Review of educational research, 71*(1), 1-27. https://doi.org/10.3102/00346543071001001

Deci, E. L., Nezlek, J., & Sheinman, L. (1981). Characteristics of the rewarder and intrinsic motivation of the rewardee. Journal of Personality and Social Psychology, 40(1), 1–10. https://doi-org.ezproxy.library.und.edu/10.1037/0022-3514.40.1.

Deci, E. L., & Ryan, R. M. (2000). The" what" and" why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological inquiry, 11*(4), 227-268. https://doi.org/10.1207/s15327965pli1104_01

Deterding, S., Sicart, M., Nacke, L., O'Hara, K., & Dixon, D. (2011). Gamification. using game-

design elements in non-gaming contexts. In *CHI '11 Extended Abstracts on Human Factors in Computing Systems*, 2425–2428. https://doi.org/10.1145/1979742.1979575

Dichev, C., and Dicheva, D. 2017. "Gamifying Education: What Is Known, What Is Believed and What Remains Uncertain: A Critical Review." *International Journal of Educational Technology in Higher Education 14*(9), 1–36. https://doi.org/10.1186/s41239-017-0042-5

Di Pietro G. (2023). The impact of Covid-19 on student achievement: Evidence from a recent meta-analysis. *Educational research review*, *39*, 100530. https://doi.org/10.1016/j.edurev.2023.100530

Feegrade, R. (2017, February 13). *Getting bored at school - eliminating boredom and fostering engagement in our classrooms.* [Post]. LinkedIn. https://www.linkedin.com/pulse/getting-bored-school-eliminating-boredom-fostering-our-feegrade/

Fredricks, J.A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research, 74*(1), 59–109. https://doi.org/10.3102/00346543074001059

Furlong, M., Whipple, A. D., St. Jean, G., Simental, J., Soliz, A., & Punthuna, S. (2003). Multiple Contexts of School Engagement: Moving Toward a Unifying Framework for Educational Research and Practice. *The California School Psychologist, 8*(1), 99–113. https://doi.org/10.1007/BF03340899

Furlong, M. ., Smith, D. C., Springer, T. ., & Dowdy, E. (2021). Bored with school! Bored with life? Well-being characteristics associated with a school boredom mindset. *Journal of Positive School Psychology* , *5*(1), 42-64. https://doi.org/10.47602/jpsp.v5i1.261

Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of*

Organizational Behavior, *26*(4), 331–362. https://doi.org/10.1002/job.322

Gill, P., Stewart, K., Treasure, E., & Chadwick, B. (2008). Methods of data collection in qualitative research: Interviews and focus groups. *British Dental Journal*, *204*(6), 291–295. https://doi.org/10.1038/bdj.2008.192

Hammerness, K., Darling-Hammond, L., Bransford, J. with Berliner, D., Cochran-Smith, M., McDonald, M. & Zeichner, K. (2005). How teachers learn and develop. In *Preparing teachers for a changing world: What teachers should learn and be able to do* (pp. 358-389). essay, Jossey-Bass.

Harbour, K. E., Evanovich, L. L., Sweigart, C. A., & Hughes, L. E. (2015). A Brief Review of Effective Teaching Practices That Maximize Student Engagement. *Preventing School Failure*, *59*(1), 5–13. https://doi-org.ezproxy.library.und.edu/10.1080/1045988X.2014.919136

Hattie, J. (2012). *Visible learning for teachers: Maximizing Impact on learning*. Routledge.

Hernández-de-Menéndez, M., Escobar Díaz, C. A., & Morales-Menéndez, R. (2020). Educational experiences with Generation Z. *International Journal on Interactive Design and Manufacturing*, *14*(3), 847–859. https://doi.org/10.1007/s12008-020-00674-9

Hoepfl, M. C. (1997). Choosing Qualitative Research: A Primer for Technology Education Researchers. Journal of Technology Education, 9(1). https://doi.org/10.21061/jte.v9i1.a.4

Holquist, S. E., Cetz, J., O'Neil, S. D., Smiley, D., Taylor, L. M., & Crowder, M. K. (2020). The" silent epidemic" finds its voice: Demystifying how students view engagement in their learning. Research report. McREL International. Retrieved from https://files.eric.ed.gov/fulltext/ED609966.pdf

Holquist, S. E., Cetz, J., O'neil, S. D., Smiley, D., Taylor, L. M., & Crowder, M. K. (2020).

"Silent Epidemic" Finds Its Voice Demystifying How Students View Engagement in Their Learning. www.mcrel.org

Holstein, J. A., & Gubrium, J. F. (2008). Constructionist impulses in ethnographic fieldwork. *Handbook of constructionist research*, 373-395. https://doi.org/10.1111/j.1744-6570.2009.01160_2.x

Hope, J. (2016). Get your campus ready for Generation Z. Enrollment Management Report, 20(4), 1–5. https://doi.org/10.1002/emt.30190

Johnson, C. S., & Delawsky, S. (2013). Project-based learning and student engagement. *Academic research international*, *4*(4), 560. Retrieved from http://www.savap.org.pk/journals/ARInt./Vol.4(4)/2013(4.4-59).pdf

Koca, F. (2016). Motivation to Learn and Teacher-Student Relationship. *Journal of International Education and Leadership*, *6*(2), 1-20. Retrieved from https://files.eric.ed.gov/fulltext/EJ1135209.pdf

Kohn, A. (1993). *Punished by rewards: The trouble with gold stars, incentive plans, As, praise, and other bribes*. Boston, MA: Houghton Mifflin Harcourt.

Kuhfeld, M., Soland, J., & Lewis, K. (2022). Test score patterns across three COVID-19-impacted school years. *Educational Researcher*, *51*(7), 500-506.). Retrieved from Annenberg Institute at Brown University: https://doi.org/10.26300/ga82-6v47

Ladd, G. & Dinella, L. M. (2009). Continuity and Change in Early School Engagement: Predictive of Children's Achievement Trajectories From First to Eighth Grade? *Journal of Educational Psychology*, *101*(1), 190–206. https://doi.org/10.1037/a0013153

Landers, R. (2014). Developing a Theory of Gamified Learning: Linking Serious Games and Gamification of Learning. Simulation & Gaming, 45(6), 752–768. https://doi.org/10.1177/1046878114563660.

Lang, J. M. (2020). *Distracted: Why students can't focus and what you can do about it*. New York: Basic Books.

Larsen, B. (2006, August 22). *Understanding Generational Differences in Education.* Workshop for WSU Faculty and Staff, Winona, MN. Retrieved from https://www2.winona.edu/asf/media/generational_differences-larsen.pdf

Leedy, P. D., & Ormrod, J. E. (2019). *Practical research: Planning and design*. Pearson Education Limited.

Levine, J. (2019, April 02). *What Gen Z can teach about the collapse of work-life balance.* Forbes. Retrieved from https://www.forbes.com/sites/joshlevine/2019/04/02/what-gen-z-can-teach-about-the-collapse-of-work-life-balance/?sh=b0dee20467a1

Madden, C. (2019). *Hello Gen Z: Engaging the Generation of Post-Millennials (Revised Edition).* Hello Clarity.

Markowitz, A. J. (2018). Changes in School Engagement as a Function of No Child Left Behind: A Comparative Interrupted Time Series Analysis. *American Educational Research Journal, 55*(4), 721–760. https://doi.org/10.3102/0002831218755668

Mart, C. T. (2011). How to Sustain Students' Motivation in a Learning Environment. *Online submission*. Retrieved from https://files.eric.ed.gov/fulltext/ED519165.pdf

McCoy, B. R. (2016). Digital distractions in the classroom phase II: Student classroom use of digital devices for non-class related purposes. *Journal of Media Education, 7*(1), 5-32. Retrieved from https://digitalcommons.unl.edu/journalismfacpub/90/

McCoy, B. R. (2020). Gen Z and digital distractions in the classroom: Student classroom use of digital devices for non-class related purposes. *Journal of Media Education, 11*(2), 5-23. Retrieved from https://en.calameo.com/read/0000917898a07ac2096e4

Mohr, K. A., & Mohr, E. S. (2017). Understanding Generation Z students to promote a contemporary learning environment. *Journal on Empowering Teaching Excellence*, *1*(1), 9. Retrieved from https://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1005&context=jete

Mora, R. (2011). " School Is So Boring": High-Stakes Testing and Boredom at an Urban Middle School. *Penn GSE Perspectives on Urban Education*, *9*(1), n1. Retrieved from https://files.eric.ed.gov/fulltext/EJ957120.pdf

Muir, T. (2021). Self-determination theory and the flipped classroom: a case study of a senior secondary mathematics class. *Mathematics Education Research Journal*, *33*(3), 569–587. https://doi.org/10.1007/s13394-020-00320-3

Nicholas, A. J. (2020). Preferred Learning Methods of Generation Z. https://digitalcommons.salve.edu/fac_staff_pub/74

Pelletier, L. G., Séguin-Lévesque, C., & Legault, L. (2002). Pressure from above and pressure from below as determinants of teachers' motivation and teaching behaviors. *Journal of Educational Psychology*, *94*(1), 186–196. https://doi.org/10.1037/0022-0663.94.1.186

Phung, L., Nakamura, S. & Reinders, H. (2021). The effect of choice on affective engagement: Implications for task design. In Hiver, P., Al-Hoorie, A.H., & Mercer, S. (Eds.), *Student Engagement in the Language Classroom* (pp. 163-181). Multilingual Matters.

Pianta, R. C., Hamre, B. K., & Allen, J. P. (2012). Teacher-student relationships and engagement: Conceptualizing, measuring, and improving the capacity of classroom interactions. In *Handbook of research on student engagement* (pp. 365-386). Boston, MA: Springer US. https://doi.org/10.1007/978-1-4614-2018-7_17

Pink, D. H. (2009). *Drive*. New York, NY: Riverhead Books.

Powell, R. A., & Single, H. M. (1996). Focus groups. *International journal for quality in health care*, *8*(5), 499-504. https://doi.org/10.1093/intqhc/8.5.499

Quaglia Institute of Student Aspirations. (2013). *My voice national student report (Grades 6-12)* 2012. Retrieved from https://quagliainstitute.org/dmsView/MyVoice_NatReport2013

Reeve, J. (2012) A self-determination theory perspective on student engagement. In S.L. Christenson, A.L. Reschely and C. Wylie (eds.) *Handbook of Research on Student Engagement* (pp. 149-172). New York, Springer. https://doi.org/10.1007/978-1-4614-2018-7_7

Reeve, J., & Deci, E. L. (1996). Elements of the competitive situation that affect intrinsic motivation. *Personality and Social Psychology Bulletin, 22*, 24–33. https://doi.org/10.1177/0146167296221003

Reeve, J., & Jang, H. (2006). What teachers say and do to support students' autonomy during a learning activity. *Journal of educational psychology*, *98*(1), 209-218. https://doi.org/10.1037/0022-0663.98.1.209

Reeve, J., & Tseng, C. M. (2011). Agency as a fourth aspect of students' engagement during learning activities. *Contemporary Educational Psychology*, *36*(4), 257–267. https://doi.org/10.1016/j.cedpsych.2011.05.002

Rothman, D. (2016). A Tsunami of learners called Generation Z. https://mdle.net/Journal/A_Tsunami_of_Learners_Called_Generation_Z.pdf

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions. *Contemporary Educational Psychology, 25(1), 54–67.* https://doi.org/10.1006/ceps.1999.1020

Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. *Contemporary Educational Psychology*, *61*. https://doi.org/10.1016/j.cedpsych.2020.101860

Ryan, R. M., & Grolnick, W. S. (1986). Origins and pawns in the classroom: Self-report and projective assessments of individual differences in children's perceptions. *Journal of Personality and Social Psychology, 50*(3), 550–558. https://doi.org/10.1037/0022-3514.50.3.550

Seemiller, C. (2017). Curbing digital distractions in the classroom. *Contemporary Educational Technology*, *8*(3), 214-231. https://doi.org/10.30935/cedtech/6197

Seemiller, C., & Grace, M. (2016). *Generation Z goes to college*. Jossey-Bass.

Seemiller, C., & Grace, M. (2019). *Generation Z learns: A guide for engaging generation Z students in meaningful learning*. Independently published.

Shernoff, D. J., Ruzek, E. A., & Sinha, S. (2017). The influence of the high school classroom environment on learning as mediated by student engagement. *School psychology international*, *38*(2), 201-218. https://doi.org/10.1177/0143034316666413

Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of educational psychology*, *85*(4), 571. https://doi.org/10.1037/0022-0663.85.4.571

Skinner, E. A., & Pitzer, J. R. (2012). Developmental dynamics of student engagement, coping, and everyday resilience. In *Handbook of Research on Student Engagement* (pp. 21–44). Springer US. https://doi.org/10.1007/978-1-4614-2018-7_2

Sulis, G., & Philp, J. (2021). Exploring connections between classroom environment and

engagement in the foreign language classroom. In Hiver, P., Al-Hoorie, A.H., & Mercer, S. (Eds.), *Student Engagement in the Language Classroom* (pp. 101-119). Multilingual Matters.

Teherani, A., Martimianakis, T., Stenfors-Hayes, T., Wadhwa, A., & Varpio, L. (2015). Choosing a qualitative research approach. *Journal of graduate medical education*, *7*(4), 669-670. https://doi.org/10.4300/jgme-d-15-00414.1

Urdan, T., & Kaplan, A. (2020). The origins, evolution, and future directions of achievement theory. *Contemporary Educational Psychology*, *61*. https://doi.org/10.1016/j.cedpsych.2020.101862

Wang, M. T., Willett, J. B., & Eccles, J. S. (2011). The assessment of school engagement: Examining dimensionality and measurement invariance by gender and race/ethnicity. *Journal of school psychology*, *49*(4), 465-480. https://doi.org/10.1016/j.jsp.2011.04.001

Wexler, N. (2019). *The knowledge gap: The hidden cause of America's broken education system-- and how to fix it.* New York: Avery, an imprint of Penguin Random House LLC.

Whitson, C., & Consoli, J. (2009). Flow Theory and Student Engagement. In *Journal of Cross-Disciplinary Perspectives in Education* (Vol. 2, Issue 1).

Willms, J. D. (2003). Student engagement at school: A sense of belonging and participation. *OECD Retrieved from Www Pisa Oecd Org on March*, 1–84. https://doi.org/10.1787/19963777

Willms, J. D., Friesen, S. & Milton, P. (2009). *What did you do in school today? Transforming classrooms through social, academic, and intellectual engagement.* (First National Report) Toronto: Canadian Education Association. https://www.edcan.ca/wp-content/uploads/cea-2009-wdydist.pdf

Wurdinger, S., Haar, J., Hugg, R., & Bezon, J. (2007). A qualitative study using project-based learning in a mainstream middle school. Improving Schools, 10(2), 150–161. https://doi.org/10.1177/1365480207078048

Yarborough, C. B., & Fedesco, H. N. (2020). Motivating students. Vanderbilt University Center for Teaching. Retrieved from https://cft.vanderbilt.edu//cft/guides-sub-pages/motivating-students/.

Yazzie-Mintz, E. (2007). Voices of students on engagement: A report on the 2006 high school survey of student engagement. *Center for Evaluation and Education Policy, Indiana University*. https://doi.org/10.1007/978-1-4614-2018-7_36