

**A Day in the Life of Kizzy: A Senior's Experience of STEM Education at Midwestern
Early College High School, an Inclusive STEM High School**

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**A Day in the Life of Kizzy:
A Twelfth-Grade Student's Experience
at Midwestern Early College High School**

The Day in the Life studies at Midwestern Early College High School¹ are designed to capture how two students, one male African American 9th-grader and one female African American 12th-grader, experienced a typical school day. The research question was: From the points-of-view of students underrepresented in STEM fields, what are the educational experiences and opportunity structures provided by their school? Two researchers shadowed each student for 2 consecutive school days. We followed the students from the moment they arrived at school to when they left for home, observing them in classes and during informal activities. The classroom observations were guided by two instruments, one that focused on the class-level activities as a whole, and a second that focused on the target student. Using semi-structured protocols, we also interviewed the students and their parents, as well as the principal, guidance counselor, advisors, and STEM teachers. After each case study was written, we provided drafts to the principal, participating students and their parents to check for accuracy, and to approve the case. This case study of Kizzy² is the result of this site visit and interpretation of findings.

Midwestern Early College High School (referred to as Midwestern for the remainder of this narrative) is a public secondary school (grades 9–12). From the outside, it is a rectangular, one-story orange brick structure with large office-style windows, easily blending among administrative buildings on the southern edge of a large state university campus. Stepping inside, however, the buzz of energy reveals that this is no office building. The building houses Midwestern Middle School on one side, serving 325 students in grades 6-8, and on the other, Midwestern Early College High School serving approximately 400 high school students. The two schools are separated by a wide, quiet hallway. Rather than locker-lined hallways punctuated by classroom doors, both the middle school and high school areas feature large, open common spaces with cubbies, open classroom areas, and many classrooms and staff offices with floor-to-ceiling windows. The school is filled with light.

Opening in 2006 with a class of 9th graders, Midwestern added a grade each successive year, graduating its first class of seniors in June 2010. The middle school was added in 2013, and a sister high school opened in Fall 2015. The Midwestern schools developed out of a partnership between a state university and a large non-profit research and development institute. Significant seed funding for the opening of Midwestern came from the state university and institute, as well as an Early College Grant from the Bill & Melinda Gates Foundation to support operations and education outreach in STEM.

Midwestern is an Early College High School (ECHS), belonging to a network of over 240 Early College schools in 28 states and Washington, D.C. Through rigorous yet supportive

¹ The names of the school and university in the case study are pseudonyms.

² All of the names of persons in the case study are pseudonyms.

integrated academic programs, schools participating in the ECHS network are able to compress the time required to complete high school course content and earn required credit hours for graduation by using a trimester system. This allows juniors and seniors opportunities to enroll in selected college-level courses. Midwestern students work with a state university advisor to help determine appropriate courses. Students at Midwestern typically take college courses at the state university, although some students attend a nearby community college. About 20% of Midwestern's students do not qualify to take college level courses while in high school, perhaps inevitable given the high bar set by the university for students. However, the students who do take college courses while in high school range from successful to extremely successful (earning many college credits) and the students who do not take college courses are nonetheless college-ready upon graduation from high school. Midwestern has served as a model high school for a STEM learning network supporting the growth and quality of STEM education in the state.

Midwestern is open to students across the state, but is not residential. Students apply through a lottery system for openings in 6, 7, 8 and 9th grade. Students can spend their middle school and high school years at Midwestern, some of their middle school and high school years at Midwestern, or start at Midwestern as a freshman in high school. Midwestern serves a student body resulting from this lottery that is roughly demographically representative of its surrounding area. As shown in Table 1, Midwestern's ethnic and racial demographic proportions align with the surrounding county (from which Midwestern draws over 96% of its students), although Midwestern did have a lower proportion of economically disadvantaged students, English Language Learners, and students with special needs.

Because Midwestern is an Early College High School, Midwestern students typically start with an accelerated college preparatory curriculum that relies on a mastery-based assessment system for the freshman and sophomore years. It requires that students pass the regular state required high school core course exams with a grade of 90% or better, or retake the course, in order to qualify for university coursework during high school. Most students begin their college transition through an "Early College Learning Experience" during their junior year. This unique design allows students to focus on one of a few STEM themes each year. During their Early College Learning Experience, students participate in both high school and college-level STEM coursework designed to support a theme, including STEM and humanities coursework. Students in the Early College Learning Experience also participate in opportunities for experiential learning relevant to the theme in the surrounding community.

The focus on STEM is emphasized through all courses at Midwestern because the school's goal is to develop fluent knowledge of processes related to mathematics, science and engineering in every class. That goal is supported through the Midwestern "Habits of Heart, Habits of Mind," that help students to become effective communicators, active and responsible decision makers, effective collaborators, critical thinkers, and inquiring, engaged learners.

Table 1*2012-2013 High School Demographics for Midwestern High School and surrounding County*

	Midwestern	County
Students Served in Grades 9-12	394	46,454
Female (%)	50.2	48.9
Male (%)	49.8	51.1
Asian (%)	7.6	4.1
Black, Non-Hispanic (%)	28.3	28.5
Hispanic (%)	3.8	5.0
American Indian/Alaska Native (%)	-- ^b	0.3
Multiracial (%)	5.9	3.4
Pacific Islander (%)	-- ^b	0.0
White, Non-Hispanic (%)	54.3	57.8
Economically Disadvantaged (%)	29.4	41.4
Limited English Proficient (%)	-- ^b	5.4
Students with Special Needs (%)	5.1	12.9

Note. --^b Indicates no data reported for particular student groups since membership was less than 10.

Meeting Kizzy

We hadn't met Kizzy³ before the school day, although the principal showed us a photograph of a smiling, confident-looking, young African American woman, and said we couldn't miss her because of her height. At a little over 6' and crowned with flaming magenta hair, Kizzy was easy to pick out standing along the wall near the school's entry where she stood listening to the morning announcements after arriving a little late to school. She was dressed casually in black jeans, a knit top, and a light-weight jacket carrying a bag that held her computer and a few personal items. Kizzy carried no books or notebooks explaining,

Everybody has a laptop...instead of getting a piece of paper teachers usually have a link where you're using the lesson plan for the day. You're either typing in your evidence map or ... looking at your grades in PowerSchool, or seeing what you need to turn in on Taskstream. It's a computer-based school.

And, if they had problems with technology, Kizzy explained that they simply sent an email to schedule help with "the tech guy."

Kizzy, a senior at Midwestern, was described by her mother as introverted. As we interacted with her over the course of two days, she seemed somewhat watchful and cautious, and perhaps not entirely sure about why she was being featured in the case study. However, she was warm and welcoming with her girlfriends, offering hugs and greetings to many as she walked through Midwestern's hallways. One of Kizzy's teachers explained, "One of the things that she's [Kizzy] really good with is relationships. She's very good at making relationships with everybody. Everybody knows Kizzy, everybody loves Kizzy." Describing herself she said, "I'm known around here, everybody knows me, but I wouldn't say like I'm popular or cool. We don't have that here. That's not important to us." She described being close with her teachers, saying, "It's easy to build a relationship with teachers here because they care. It's not like they just want you to get the grade and get out of class. They care. They care a lot." While sometimes seeming reticent to engage or participate in classroom activities, Kizzy appeared willing to both possess and express strong opinions when it was important. She seemed thoughtful about how to respond in the classroom, her actions measured to produce the desired outcomes. Although sometimes passive and remote, underneath was a passionate, caring, thoughtful, and focused young woman, as this case will show.

Kizzy has lived her entire life in the city near Midwestern with her family. She was the youngest of eight children, as her mother explained,

My husband and I, we actually have a blended family, so I have four biological children, my husband had three biological children, and then when we got married we decided we needed one and didn't actually want to have one, so Kizzy's actually our chosen child and she is our baby.

Kizzy's parents both worked at the state university, which bordered Midwestern's campus. Her mother was in "transportation" and her father in "physical facilities and maintenance." Kizzy described the start of her school days, saying, "I get up at five in the morning. My mom brings me to school (Midwestern) because they don't have transportation, like buses, here...so we rely on our parents." She added, "[my mother] comes to campus at 6:30 a.m., but we come all the way from the east side...so we need a 30-minute time period." Because she arrived at 6:30 a.m.

³ This pseudonym was chosen by the participant.

and didn't need to be at Midwestern until 7:30 a.m., Kizzy explained, "It gives me 30 minutes or so to do some studying or homework that I missed."

This trimester, Kizzy is taking four courses that she needs to graduate: Trigonometry, U.S. Government, Entrepreneurship, and 3D Art. The Trigonometry teacher said Kizzy "needs all four credits in order to graduate." However, she added that Kizzy "has all passing grades," and is on track to graduate in the spring. Kizzy explained, "I finished all my English sophomore year; I finished all my sciences my junior year." However, she struggled more with the math and spent extra time to "recover" some classes. This means that she had to re-take some courses. This is not a big deal at Midwestern; many students repeat courses and the trimester system gives students time to repeat until they master the coursework with grades of 90% or better.

Kizzy's college goal is to go into pediatric social work, because she likes "helping the kids that are troubled," adding, "I don't believe any kid is bad." Her mother explained that Kizzy "has a very loving heart and she loves children, so she wants to do social work." However, she added that because of Kizzy's strong feelings and her particular strength in "debating," she might do well to "look more into law... [where] she could advocate for children in that way." Kizzy has been accepted to a branch of the state university in the fall. She chose this branch for a couple of reasons: "They have my four-year program" in social work and also offers a master's program option that can be completed as a part-time student while working in the field. In addition, "It's cheaper; it's way cheaper." Because of her parents' work at the state university, Kizzy will receive a 75% scholarship to attend the state university. According to her mother, Kizzy will be responsible for funding the remaining 25% of the tuition. She also said that Kizzy will need a car once she graduates, adding, "In our family, we feel you need to work for it... [so] you'll appreciate it more." She explained, "You need to do this...because you're getting ready to go out there...you're going to have bills...[and you need to] learn how to manage money."

Described by her mother as a "workaholic," Kizzy recounted her work schedule: "I work [at a local pizza shop] Mondays, Wednesdays, Fridays" after school, and "Saturdays, and Sundays." When asked how she was able to juggle her work hours with her school responsibilities, Kizzy said, "They give us time in class; they give us time after school. I just take advantage of those times, so I don't have anything to worry about at night." She added that when she is assigned "a whole bunch of trig homework," she uses the time right after school before having to be at her job, or she "wake[s] up probably like 4:30 a.m. ... to finish off the homework." She explained, "Because I have good grades, I keep my grades up. I've got like A's and B's." She added, "The workload doesn't bother me at all. I can get a whole bunch of work and get it done." On the days she didn't ride the city bus to her job after school, her mother picked her up from school and she would "just hang out with my mom," or help her mother with home remodeling.

How Kizzy Came to Midwestern Early College High School

When asked how she chose to come to Midwestern, Kizzy responded, "I didn't; my mom made me come." And her mother agreed saying, "Kizzy didn't choose Midwestern; I chose Midwestern, because I wanted something better for Kizzy than what I felt that she was receiving in the [neighborhood urban] school system that's here." Kizzy's mom explained that she learned about Midwestern through a chance encounter: A "parent came in to get a service done where I worked, and his son was there [at Midwestern] and I overheard them talking and I asked some questions about it [and thought] that would be great." Her decision was influenced both by

Midwestern's STEM focus and its being a school that "the state university pretty much had their name on and backed." She added, "That made me feel like that she was going to get the best." She explained, "Math and science, I think that's the future. And of course, health science and also engineering...we're going to have those jobs. [Math and science will] also take them further when it comes time for them to get a higher education, a collegiate level-type education."

However, in contrast, Kizzy commented, "I didn't come here to study STEM." She added,

I don't know a lot of students that come here to study STEM. Some people come here to do college classes early, some people come here just to come here, some people come here because they like it, some people come here because the classes are smaller, they get a better education⁴.

Commenting that what Midwestern had to offer would complement Kizzy's academic strengths, her mother explained,

Her strength is in writing, [yet Midwestern] challenged her in a lot of [other] areas that she felt like she didn't do well enough in... Her challenges have been in the math...I think by her being here, it actually helps to balance out what her strength is, because it will...bring her up to what she's going to be able to do and accomplish and want to do once she gets to college; she's going to be better prepared.

Kizzy's family values education, and her mother said:

I've always been very interested in education and that was one of my main concerns when it came to raising the children. I wasn't one that was fortunate enough to be able to afford private schools ... but I wanted them to have the best education. So, in doing so, I looked out [to see] what was available ... and some of my children have had the opportunity to go to alternative school systems here in Columbus, boarding school system, and also now private school.

Kizzy's older siblings were in college or had graduated from college and were working in such fields as nurse practitioner, performing arts, and family services. Her brother, also a high school senior, had entered the lottery for Midwestern but wasn't selected, and instead received a scholarship to attend a local, Catholic, college prep boy's school.

⁴ According to an administrator, students at Metro come from a variety of home school districts, from urban to suburban. Kizzy's perception may not be applicable to the wider school population; some suburban students have many school choices and chose Midwestern specifically for what it provides in STEM, while students from the urban school district may have fewer choices and select Midwestern because it is seen as a "good school".

Kizzy's Day

Morning Meeting: "Good morning, good morning, good morning."

It was 7:50 a.m. and all students had collected in the large open space just inside Midwestern's front door for morning announcements. A gentle clap and a quiet voice saying, "If you can hear this, clap once," was followed by a single responding clap from some of the gathered masses. This cycle repeated with a double clap and more students responding. As the administrator quietly said, "We are almost there," the room slowly came to silence and administrators, teachers, and students gave announcements of testing schedules and club meetings. As morning meeting ended, we could see Kizzy moving off down a far hall toward her first period class, and followed. Navigating the hallway, Kizzy reached out to her girlfriends, exchanging greetings: "Hi Kia" and "I like your hair!" and sharing hugs of friendship.

Advisory: "You've got to go for your dreams."

On Tuesdays, Kizzy's day started with a 40-minute advisory period, which for seniors took the form of *Senior Communications*, where seniors received guided instruction on all facets of applying to colleges and forging a life after high school. Kizzy arrived in the conference-type classroom carrying a McFlurry and a bagged breakfast and took a seat near the head of the long conference table. About 20 students filled the table and the chairs that lined the periphery of the room. Waiting for a guest speaker to arrive—she was running a little late—the teacher asked students to share good news or "anything to celebrate." Kizzy said, "I will be turning 18 on April 6," later adding, "I got Shadow Box," a major performing arts competition that seemed to have high status among the students. Kizzy's area was dance.

A smiling, confident, and easy-going speaker soon arrived. She was a young professional-looking biologist from the state university. Her first comment was that she "drove her Toyota like a Corvette" to get to the school. She asked the students to introduce themselves with their name and an anticipated career. "Kizzy, social work" was Kizzy's response. Other careers included: pediatrician, cryptologist, sports management, premed, "money," and photography.

The speaker has a prepared PowerPoint presentation projected on the screen, but as her talk proceeded, she paid almost no attention to it. She was a strong speaker on a mission with a message: "Your actions determine your future." She suggested that students had power through their "network of association." She focused on not just going to college or being prepared for college, but exhorted students to think about how their choices today could affect their future pathways and possibilities. "If you don't change the way you think, you can't change your future." She encouraged students saying, "You've got to go for your dreams." Taking time to describe her own pathway, she spoke frankly about a family of truck drivers and factory workers, of alcoholics and felons, of being 17 years old, pregnant, and a drug user. But she decided on a different life for her son, whom she raised as a single mother, and became the first in her family to graduate from college. She now worked at the state university as a biologist and researcher.

She ended her talk saying, "You have to be persistent; you have to be strong, [to] get better at looking adversity in the face and just keep going.... Break the curse that accepts mediocrity and worse... and maintain your position... Lock arms with successful people."

Throughout this moving talk, Kizzy didn't often look at the speaker, but appeared to be taking in her words, being reflective and thoughtful. As the speaker finished, the students

clapped and one girl suggested she was “preaching to the choir.” Kizzy wiped away tears, saying quietly to the student next to her, “She got me crying.” Later, at lunch when asked about the experience, Kizzy said she was moved, as were her friends, pointing out that every student at Midwestern experienced some of the same challenges. That was why the message resonated.

The advisory period was 100% on task with some time spent waiting for speaker. Eighty-nine percent of class time was teacher centered and 11% small group centered.

Period 1, Trigonometry: “You know this; go back and try again”

Kizzy moved amiably through the hallways, again greeting and hugging girlfriends as they passed, to Trigonometry class. Trigonometry was something of a challenge for Kizzy. She had been signed up to take Trigonometry during the previous semester, but according to her teacher, Ms. Reiner “It had been a year and a half since she had had the prereq course, Algebra II...[and] she did not do well on her first test [in Trigonometry], and she shut down... Halfway through the second unit, she was in tears.” Ms. Reiner went on to explain the chain of events that would help Kizzy pass the Trigonometry course that she needed to graduate from Midwestern:

I said “You never got mastery in that previous course so why don’t we just do something different for you?” And so actually I ... gave her the Algebra II textbook and said “Go ahead and start chapter one. You’re going to start and work your way through... You’re going to start reviewing these topics because in the spring, you’re going to have to take care of passing Trigonometry with me.” And so, that’s rebuilding her confidence. She started working on her own. She started very independently. She was teaching herself the content, again, by herself. And so, this system can work well with her... She’ll ask questions; she was not afraid to ask questions, which is to her benefit.

Ms. Reiner predicted, “She’ll make it through.”

Kizzy entered the large, bright, math room filled with modular desks arranged in groups of four to six on a black and grey abstract-patterned carpet. A large, movable red “barn door,” that wasn’t particularly soundproof, divided this classroom from another next door. Kizzy made her way to a collection of five desks to join her friend Shauna and two boys. The boys neither greeted, nor were greeted by Kizzy or Shauna, and very few comments were exchanged among them during the period. In this mixed classroom described by the teacher as “freshmen all the way to seniors,” there was one all male group, one all-female group, and the rest were co-ed.

Ms. Reiner, a warmly positive, cheerful, young woman, was running a “flipped-type” classroom where students were responsible for watching videos of her lessons outside of class and coming to class prepared to work problems. Kizzy explained, “[Ms. Reiner] gives us notes and ... we have to use our resources and figure it out ourselves.” She added, “We have to research our own stuff on the computer.” As class began, Ms. Reiner was returning a homework assignment—a worksheet of problems on logarithms—with incorrect answers circled, asking the students to spend some class time to “improve upon their work.” Some students worked independently and others collaborated to figure out their mistakes. Students could also access a notebook of solutions provided in the classroom. When Kizzy asked for help, Ms. Reiner encouraged her to work with Shauna because they had gotten different problems wrong. Ms. Reiner wanted the students to use the problem along with its correct answer to figure out how to work the solutions—to use a deductive process to get from problem to answer. Ms. Reiner worked hard to *not* provide answers or just give the students a single way to solve them, asking students to really get their brains on the work to figure out the process on their own.

Kizzy noted that occasionally she struggled with this learning strategy saying, “Sometimes it isn’t good, because I’m a visual [learner]; I need somebody to be there, teaching me and helping me through the steps.” Shauna and Kizzy kept at it, punching numbers into their calculators, occasionally calling the teacher over who gave them guidance. Although she didn’t appear to make strong efforts to encourage student collaboration, Ms. Reiner kept close watch on the students, regularly interacting with individuals and groups, responding to raised hands, providing words of encouragement, and making sure that the quieter students were making progress. Ms. Reiner explained that for Kizzy, “Once she’s done a couple of problems, she can do them... [And] because [she’s] getting that immediate feedback [she’s] about to be high performing.”

After about 20 minutes, Ms. Reiner asked each student to take out a different colored pen to re-grade their papers, explaining that this was a “formative assessment” that wouldn’t count toward the course grade, but should help them with their test the next day. She reviewed the most difficult problems at students’ request, which mostly involved a review of the correct answers and the steps to solution, but not an analysis of the problem solving process. Ms. Reiner called on students, using modes of address ranging from “Mr. Andrews” to “honey.” She also seemed to calibrate her questions to students’ abilities, allowing them to be successful in their responses. Over the course of the period Ms. Reiner ultimately called on or interacted with every student in the class.

This class was 100% on task: 40% teacher focused and 27% individually focused, and 33% either individually or small group focused.

Trigonometry—the test. The next day the students took a full period (90 minute) test. Arriving just a little late to class, Kizzy picked up her copy of the pencil-and-paper test from the teacher, and moved to the same seat across from Shauna, where she sat the previous day. She placed her McFlurry at the top of her desk, took out her pencil and calculator, and began working. The test, about four pages long, appeared to be teacher-made with questions in either algebraic form or of a few short words with boxes for the students to show their work.

Kizzy worked diligently. About 45 minutes into the period, while making one of her passes around the classroom, Ms. Reiner noticed that Kizzy was struggling with some of the questions. She engaged Kizzy in a brief discussion, and asked questions that appeared to get her back on track. This happened a couple more times during the period. After about an hour, Kizzy tried to hand in her test. Ms. Reiner scanned it; saw that some questions were not answered, and gave it back, saying, “You can do it.” (Kizzy called these interactions pointers, and she explained that she had had trouble taking tests, “I’m the type that gets stuck on one step and don’t know how much further to go, so I’ll sit there like I don’t know.”)

The class time was 100% on task, and 100% individually focused.

Period 2, Government: “We all learn better together.”

Government class met in a large, bright, high-ceilinged classroom with lots of windows and modular desks on rollers. As Kizzy and her two friends (Shauna from the previous class, and Desireé), chose seats together on the outer edge of the classroom farthest from the door, the teacher, Mr. Bauer intercepted them saying, “Having the three of you together isn’t the best idea,” asking one student to choose to sit in somewhere else. Desireé picked up her bag and moved across to the other side of the classroom, still on the fringe.

Mr. Bauer, a middle-aged man with a previous career as a lawyer, began class by asking students how they thought they had done on yesterday's quiz, seeming to suggest that there was a problem. The quiz had been supervised by a substitute—Mr. Bauer was helping with school-wide testing—and students hadn't performed as well as he thought they should. Seeming upset, but still polite and respectful to students—Mr. Bauer was not “yelling” but reprimanding the entire class—he asked them, “When do I want you to work really hard?” to which they responded in chorus saying, “In class.” Mr. Bauer wanted students to maximize their time in class when they could learn together, so they wouldn't have as much to do on their own. Suggesting the “last class was like a dead zone of engagement” where he “saw a whole lot of staring,” Mr. Bauer seemed to be encouraging a little more energy in today's class.

Directing students to “Unit 2 Lesson 2” in Taskstream on their computers—also projected on the LCD screen at the front—Mr. Bauer began to teach using questions that required short answers in a sort of fill-in-the-blank style. In fact, students were filling the blanks in the worksheets on their computers while Mr. Bauer typed and projected the answers on the overhead screen. During this lesson on the amendment process in government, students were somewhat lethargic participants. In response, Mr. Bauer reminded them that “brain-based research” suggested more effective learning happened when they actively engaged in the learning process. Saying, “We all learn better together,” he encouraged all interested students to give him a “physical sign” that they wanted to be part of this day's lesson by gathering closely around his desk. All but six students scooted their desks into a tight semi-circle around Mr. Bauer's desk and began to work collectively through the multiple-choice worksheets embedded in Taskstream. Kizzy and five other students, four of whom were African American, chose to work independently on the fringe of the class using the online resources, which appeared to be an acceptable learning option.

In a later conversation, Kizzy commented that the content of today's discussion had already been taught. She said, “Everyone who stayed back [didn't move to engage with the teacher] was pretty much finished with it,” and added, “I worked with Shauna [during that period] and finished that section.” Kizzy and Shauna worked together on a sheet, which asked them to interpret certain quotes from the Constitution into common language. They engaged in a discussion that seemed thoughtful, insightful, and productive, on content that was not all that different from what the rest of the class was learning. As they worked, they tangentially listened to the class discussion, answering some of the teacher's questions to each other.

At the end of the 90-minute period the class wound to a close. Students packed up their computers and Kizzy and Shauna headed to lunch. In this class 100% of the teacher's time was on task, with 100% of the time being teacher centered and the majority of students directly engaged in the teacher-led discussion. However, independent or small group work was accommodated and for about 56% of the class time, some students worked independently or with a partner. According to an administrator, this class section had been formed to meet the learning needs of students who had historically struggled with more independent student work – hence the structured notes and direct instruction.

The second day. The day's lesson was projected on a white-board at the front of the classroom. Kizzy entered the classroom, choosing to sit at the first desk in the first row right in front of the white-board. She put her bag down then left the classroom returning after a couple of minutes with a paper retrieved from the copier, and taking her seat next to Shauna.

Mr. Bauer started class right on time and began asking questions about Article 3 of the Constitution. Much like the previous day's class, he called on students to read sections from the

documents projected on the whiteboard and to respond to questions about what was read. Students appeared to be following the discussion with moderately divided attention. Kizzy, computer open in front of her, seemed engaged watching the screen and taking notes. About 20 minutes into the class, Mr. Bauer called on “Miss Perkins” (Kizzy) to answer a question about what was required to formally change the Constitution. She responded, “You need a three-quarters amount for ratification,” and added, “To propose [a change] requires a two-thirds.” The teacher asked the whole class to clarify, “Two-thirds of what?” and “Three-quarters of what?” to which students responded collectively and correctly.

For the next 15 minutes, Mr. Bauer and Kizzy engaged in what appeared to be a familiar back-and-forth banter. Mr. Bauer began by saying, “Miss Perkins...I think you’ll be a good person to answer this,” asking a leading question that seemed to anticipate a particular response. Mr. Bauer asked, (in discussing national versus local government) “What would being disconnected from the people who control you make you want to do? ... If they gave you rules that you didn’t agree with, how might you feel? ... Might you want to rebel?” Kizzy agreed that she would probably resist the influence of a remote influence that she didn’t know.

There was also a diagram on the board of what Mr. Bauer called “The Federalism Cake” that Shauna, when asked, described as looking like a wedding cake—large general population on the bottom having less power and the leaders making up the small, more influential portion on the top. When asked who would be at the top of the Midwestern hierarchical government, Kizzy responded, “Aunty Rather,” referring to the school principal. Mr. Bauer said he’d never heard Ms. Rather called that before, but agreed.

Throughout the period, Mr. Bauer reminded students to have “active hands,” meaning they should be taking notes, highlighting phrases in the narratives on their computers, or otherwise actively interacting with the class content. Kizzy typed on her computer while Mr. Bauer led a discussion on the freedom of speech, where he juxtaposed his students’ rights to write and publically share critical narratives of him, and consequences based on outcomes. He ended the class with, “Your rights end when they infringe upon mine.” Students packed up and headed to lunch. For this class 100% of the time was on task; about 94% was teacher centered and 6% focused on individual work.

Lunch: Food and Friends

For the quick half-hour lunchtime, students gathered throughout the open spaces of the school to meet their friends and eat. Kizzy and a small group of four or five others, mostly girls, mostly African American, congregated near a counter next to the refrigerator where students could leave food during the day. The students stood, sharing food—pasta and sandwiches brought from home—and stories. Their language was comfortable, familiar, and relaxed.

On the second day, as lunchtime drew to a close, an administrator gently implored students to “Clean up and get moving to class,” adding “you should *already* be in class.” Kizzy, moving at a deliberate pace, cleaned up the pizza left-overs that she and others had ordered for lunch, and grabbing one more piece and a large bottle of soda, headed to Entrepreneurship class. When she got there, class had already begun.

Period 3, Entrepreneurship: Creating a Business Plan

Entrepreneurship, an elective class that appeared to be mostly seniors, was taught by a woman with a strong business/marketing presence and a relaxed, welcoming manner. This classroom was large with floor-to-ceiling windows and the ubiquitous rolling desks and carpeted floors. The teacher's desk was off in one corner and stacks of extra chairs and desks lined the back wall of the room. Kizzy pulled a desk to the back of the classroom right inside the door and sat with a two friends between a couple piles of stacked desks.

Class began with students presenting summaries of current events. One student had prepared a PowerPoint, but others offered stories with less clarity and detail, which didn't seem to be a problem. The topics didn't appear to have a particular theme; the activity seemed more about helping students pay attention to current events than the actual story content.

The class was divided into Lemonade Stand CEOs (about one-quarter of the class) and their employees (the remaining three-quarters). Kizzy was an employee. The class had been writing their own résumés and recently had read and reviewed each other's. Asking, "What were three trouble areas?" the teacher sought students' reflections on the reviewed résumés. Suggestions of "margins," "too bland," or "using I, me, and mine," and "color," helped direct a discussion on how the résumés could be improved. Students were reminded that their résumés—the originals, copies with other students' suggestions and edits, and the final cleaned-up, "glowing" versions—should be handed in during the period. The CEOs were called to gather together at the front of the room to work on creating company descriptions and writing descriptions of the jobs they needed to fill. Kizzy and the other "workers" finished editing their résumés and began working on cover letters they would use to apply for these jobs.

Kizzy sat in a small group of girls. She worked on her résumé on the computer, answered texts, wore headphones, snapped her fingers from time-to time, and seemed to be multitasking with divided attention. She finished writing her résumé, sent it to the printer outside of the classroom, left the classroom to pick it up, and returned with it laminated. She showed it to a friend who, visibly impressed, asked, "You laminated it? Where did you get that done?"

Fifteen minutes before the end of the class, about a third of the class packed up to leave for a Wellness class that met on the state university campus and required a bus ride to get there on time. Kizzy said that class generally stopped when these students left and the remaining students worked on whatever they chose for the rest of the period. Some students met individually with the teacher to talk about their résumés. Others engaged in informal conversations; Kizzy talked about a peach-colored dress she wore to an earlier prom, other students described interesting videos they had seen on YouTube. The teacher prodded, "Are you being productive?" encouraging students to stay on task.

Day 2. The second day of Entrepreneurship class continued much like the first. Kizzy sat in the same place and current events presentations started the class. Moving on to the Lemonade Project, students posed questions about what would happen if a worker couldn't get hired, or became disgruntled on the job. This led to a discussion of hiring fairness, writing good cover letters, and both worker and CEO responsibilities.

In Entrepreneurship class, students were given responsibilities and it was assumed that they would do the work. The teacher provided guidance and deadlines, was available for questions and consultation and openly encouraged and supported the students. However, except for the occasional, "Are you being productive?" students were left on their own. As the Wellness

students again left class 15 minutes early, the remaining students relaxed, chatted, and enjoyed each other's company.

100% of class time as directed by the teacher was on task; however not all students were deeply involved all of the time. There appeared to be a fair amount of Internet searching and texting. Forty-seven percent of the class was teacher focused: 13% of this on the actual teacher and 34% on the students who lead the current events discussions. The remaining 53% of class time was focused on small group or individual work.

Period 4, 3D Art: 3D Pattern Design

The last class of the day was 3D Art, located in the middle school side of the building. High school students weren't allowed in the middle school unless they were attending a class. Kizzy took a seat near the door at a set of six desks assembled as a unit. Other students filed in to class appearing to sort themselves by grade or age. 3D Art was a multi-grade class—about half were 9th graders. A din of middle school student energy could be heard over the half-wall partitions that separated the art room from the rest of the middle school space; however, it was easy enough to hear the teacher as she described the plan for the day.

To begin class, the art teacher reviewed the several art projects the students had to complete before the end of the year. Some were already in progress—baskets and plaster “hand” sculptures—and students would soon be starting wire sculptures. Because a substitute teacher would be covering class for the next two weeks, the teacher was reviewing expectations in detail to make sure all students were clear on their assignments.

In this class, students not only created three-dimensional art objects, they carried out research and prepared individual presentations about the medium they were exploring and the artists who produced works in these media. During Wednesday's class, students worked on a 300-word paper and a 10-slide PowerPoint presentation on their artist and sculpture-type. The teacher handed out rubrics for the assignments that articulated details such as the need to include one photo of the artist and two photos of the artist's work; one art “element” (such as shape); one art “principle” (such as balance); eight facts about the artist; and a list of sources used for reference. Students also were given rubrics on criteria for their presentations such as “eye contact,” speaking loudly, and not reading from the slides. All students would be presenting while the teacher was away—four students would be chosen at random to present each day so all needed to be ready to begin presentations the following Monday. After giving their presentations, students would be responsible for uploading their PowerPoints into Taskstream, where all class data were stored.

During this class 100% of the class time was on task; about 25% was teacher centered and 75% individual student centered. However, even though students worked on their projects individually, the tasks allowed for companionable socializing.

The second day. The substitute teacher greeted the students as they entered class with a familiarity and ease that suggested they had worked together before. Kizzy put her bag on her usual table near the door then joined other students digging through cardboard boxes for partially started basket projects on the center supply table. Each found their baskets then grabbed balls of yarn to continue their constructions. Kizzy pulled out a graph paper design she had created, which she followed as a pattern as her basket grew.

The substitute took attendance then moved around the classroom checking to make sure each student had a project to work on. The students executed their 3D pattern design by

wrapping yarn around ropes bringing their baskets into shape while talking with friends in a relaxed and sociable environment to end the school day.

Discussion and Conclusions

The goal of this case study was to see Midwestern Early College High School through the eyes of a student in a Day in the Life format. Kizzy's day may not have been representative of the 80% of the student body that was already taking college classes. Nonetheless she was being prepared for college; teachers and administrators took pride in her progress over her four years at Midwestern and supported her. There was something about her spirit and sense of justice that drew people to her, and made them want her to succeed.

What did Kizzy learn?

It was expected that all Midwestern students would be prepared for college by the time they graduated. Kizzy was no exception. Even though she struggled to achieve mastery in some of her classes, she was still expected to take a rigorous course load and to pass more than the minimum in math and science. Academically, Kizzy was pressed beyond her own inclinations. Her mother explained,

I think here at Midwestern, they present opportunities for the students to be able to excel in areas that [are] generally not their strengths... [For example,] math was not one of her strong suits, but Kizzy, now this year, is taking Trig—so to me that's an accomplishment considering what it could've been somewhere else.

She predicted that if Kizzy had been in a typical high school, "I think she might have stopped at algebra—whatever their math level would have been in order for her to graduate... I think that... it would have been bare minimum, I really do." In addition to the required coursework, Kizzy's mom explained that students were well supported in stretching themselves academically, saying,

They [teachers at Midwestern] assist them in those areas to let them know, "Okay, you can do it... You may not be able to master it, but you will at least be able to pass... You can at least get good grades and get a clear understanding on how to be able to do the subject."

When asked to compare Midwestern with a school she might otherwise have attended, Kizzy said, "Midwestern is a lot different... [particularly] the grading system and the technology... We don't do textbooks." Technology was an important part of Midwestern, and every student was issued a laptop when they enrolled. Approaches to teaching and learning appeared flexible and adjusted to students' needs. The teachers also appeared to pay attention to education research and were willing to try out new approaches that might better support their students. The Trigonometry teacher had recently designed her course around the use of a "flipped classroom" method to allow students to do more problem-solving in class. Students also made regular use of classroom-correlated information on Taskstream to work alone or in small groups instead of with the whole class. During our site-visit Kizzy worked independently with online resources in both her Trigonometry and Government classes. One of Kizzy's teachers commented, "She's discovered that online learning is a place that she can really flourish because she can go at her own pace. And she really likes that. She does really well with it."

The coursework at Midwestern was designed to ensure that students were academically prepared for college, and the school's advisory system made sure they had post-secondary plans in place by the time they graduated. All students were exposed to college-going through three years of "advisory"—a weekly in-school meeting of the same set of students led by a teacher.

They learned about careers and pathways. An additional year of Senior Communications supported students through college application process and provided social and emotional preparation for the world beyond high school. Kizzy knew what she needed to do to go to college, had a good sense of how her post-high school years would play out, and understood what she had to do to get there.

What happened from a social, emotional, and developmental point of view?

Described by one of her teachers as “a night-and-day student,” Kizzy seemed to have changed substantially during her time at Midwestern. While her mother described her as “an introverted person,” one of her teachers saw her as “very loud, very vocal, very social.” Another teacher explained, “In the initial phases of Kizzy’s academic career, she was very resistant; she was not willing to go with the program and... initially she was quiet, but then she started becoming very outspoken because she has an outgoing personality.” Kizzy herself commented, “I was horrible freshman year...I didn’t want to come here...I was failing. I wasn’t doing good. I was always in trouble.” At the end of freshman year, Kizzy said her mother came in to school with the intent of withdrawing her to enroll her in a different school. Kizzy’s mom explained,

I remember coming in and speaking to either the secretary or the principal at that time and explained it to them, “I need to remove Kizzy from the school,” and they were asking me ‘Why?’ and I [said] “Well, she needs to master...and she hasn’t mastered anything, so she’s not going to graduate and we need for her to be able to graduate...[if] she can’t do that here, I need to find someplace else to put her.”

Kizzy’s mom said the Midwestern administrators encouraged her to keep Kizzy in the school, explaining, “The education she’s receiving here is far more beneficial than the one she would receive out there.” The administrators explained to her that if by 11th grade Kizzy still hadn’t mastered course content at the 90% level that would enable her to take courses at the college, the system “changes over to a credit system like it is in a regular school [where you need] so many math, so many English... and then she would still receive the diploma.” Kizzy’s mom explained that she and Kizzy had a conversation “regarding the importance of her education and the school,” and “that following year...[there was] a change in her.”

Kizzy said that during her sophomore year, “I just realized like I’m here, I might as well just do what I can.” Her biology teacher said that Kizzy “started to see, ‘Oh they really do care about me and where I go and what I do.’” Kizzy credited caring teachers—her English teacher in particular saying:

She was in my ear...she was on my back, [saying] “You need to get it together.” ... She was there supporting me, seeing the potential; she was helping me. It’s just like those teachers that are there...[who] give you that push and help you, who just don’t give up. Those are the ones that really help[ed] me through it.

Kizzy also had developed strong relationships with school administrators and other support staff. At one point, she referred to the principal saying “I can count on Ms. Rather for a lot of things. She’s another one of those who was pushing me.” Her Biology teacher, who was also her advisor for her first three years at Midwestern described, “Over the course of second year, third year, fourth year, just to see her change, she has done a 360.”

During her time at Midwestern, Kizzy developed as a learner. She explained that at her old school, “Unless you were earning a certain [low] percentage [in class]; you couldn’t go for extra help. It almost made you get that bad average so you could go for extra help.” But at

Midwestern, Kizzy learned to take responsibility for her own learning and sought out assistance. Her mother suggested that some of Kizzy's motivation came from having to be more independent, saying, "Because they have such freedom here...it actually helped Kizzy work on time management and being self-motivated... no one actually needed to be over her shoulder telling her what it is that she needed to do." She added, "It taught her a little bit more regarding responsibility and accountability when it came to her lessons here at school." Kizzy explained that she learned to seek out assistance beyond her own teachers. She said, "We can go to other math teachers around here who will sit there and help us... It doesn't have to be our math teacher that we have now." Her mother added, "At one point this year... she got the tutor...she did this on her own."

Where will Kizzy's experience at Midwestern take her?

When asked whether she would come to Midwestern if she had the choice to do it over again, Kizzy answered, "Yes and no." No, because another school could have been a much easier, but yes, because she felt that Midwestern had prepared her well for her future. "It helped me a lot," Kizzy said, adding, "When it comes to college, we're ready for it." Kizzy's mother explained, "When they leave here...they are able to go on and further their education; they have a fighting chance—as someone would that was coming from a private school—...and that's because of Midwestern learning." Kizzy had early exposure to the pathways to college, the academic learning necessary for a successful college-going experience, and the social and emotional support to enable her development as an independent and motivated learner that would carry her into the future.

The learning at Midwestern was different. When asked to describe this Kizzy said, "At my old school we would just memorize information, and [even though here] we memorize *some* things...they are pretty good about proving things here." The focus of learning was different; it was on the student rather than the content. One of Kizzy's classmates commented that at Midwestern, the success of *every* student was prioritized, and that Midwestern saw it as their responsibility to ensure that every student learned and graduated. He explained, "At other schools, you can do it, but you have to do it yourself, you have to know about it. I think that's the big difference."

There were many institutional supports that helped Kizzy arrive in a solid place as a graduating senior. Supportive teachers and administrators, a structured advisory system, accommodations for individualized instruction, tutoring, and a strong culture of college knowledge and college-going combined to keep Kizzy on track to graduate and go to college. The mastery program pushed her in all subjects, but particularly in math, where if given a choice she might have taken an easier route. Administrators in Midwestern knew where Kizzy was academically, were invested in her as an individual, had a pathway for her to follow that ensured she did the work necessary to get into college, and helped her learn to make decisions that were in her own best interest.

Kizzy might have made these remarkable transformations at any school, but she, her mother, and her teachers painted a picture of how Midwestern's resources combined to produce this outcome. According to her mother, "She realized that she's going to be very prepared when she goes to college, and it's all because of Midwestern." And her Biology teacher said, "So I really think, yes, it was the personal connections here, but it was a decision that she made on her own." She added, "At the end of each school year, we do roundtables where the students reflect

on their year and how they did, where they were great, where they struggled, and each year hers has gotten better and better... I cannot wait for her...Senior Exit Gateway.”

Epilog: We later learned that Kizzy’s Senior Exit Gateway was a moving experience for all, and that she publically acknowledged what the school had done for her as the school acknowledged her accomplishments. She entered college the following fall.