CHAPTER 1.

WARLORDS!: DECONSTRUCTING DIGITAL GAMES FOR CLASSROOM USE

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Multiple versions of the game *Civilization* have been released through the years. I've played each of the five versions that creator Sid Meier has offered—along with bonus content and "expansions." For an hour or two each weeknight, I enjoyed managing city production levels, technology trees, and scouting out new lands in which to grow my empire. This chapter is essentially the story of how my evening gaming informed an entire unit of my curriculum and the creation of a classroom desktop version of *Civilization* that I called *WarLords!* I will outline the game first, why I use games in the classroom, the game design of *WarLords!,* and finally I will share the outcomes of this example. First the game itself:

FOR READERS UNFAMILIAR WITH *CIVILIZATION*

The caption on the original 1994 game is still why I play: "Build an empire to stand the test of time." You start the game by founding a single city in a world edged with black, unknown territory. As you encounter other empires (computer controlled or later by human opponents), you find their technology is different, you feel out if they will be friends or foes, and you ultimately seek to keep up or be overwhelmed by them. You may even declare war on them, just to let off some steam. In full-length games, it might take 70-100 hours to work from *granaries* to *space travel.* The game demands that you constantly choose among a focus on military, agrarian, scientific, or financial goals. More recently, Meier has added cultural, religious, diplomatic, and tourism elements to the game; still, all the parts are connected to the growth of your empire. In the end, the game, through many iterations, still appeals to players with a core verb of "managing" an empire. Centrally, players have fun … doing what outsiders would call "working." That was and is fascinating from a teacher's perspective.

For example, if you start the game dreaming of the power of military might, then you can start building warriors who challenge the might of the nearby Assyrians. To do so, you first need to gather food, mine metals, and have an income that can support "troops." The Assyrians, however, reactively build "walls" that counter your warriors and quickly invest in scientists who "discover" irrigation and build granaries that double their food provision rate. The Assyrian food surplus then results in a city

that quickly grows and produces two more settlers to build additional cities. In a short century, your single city is well defended, but it cannot outpace the construction of chariots and archers that the Assyrians are building with those two extra cities.

Your dreams of empire are edging further away with each passing turn/year, and you realize something: It's all connected. To build a strong military, you have to feed your people. To feed your people, you need them working. To keep them working, you need to build cultural centers, temples, and coliseums. At the end phases of a game, civilizations can have scores of cities, covering continents, with hundreds of moving units, competing cities, resources, roads, naval forces, and events. This is not so much an action game as a *management* game that appeals to your sense of planning, strategy, and the satisfaction of meeting your own goals within a complex system.

So, for each new version of the game, the selling points are the addition of *more* complexities to manage, not less difficulty or easier gameplay. Fans of these games demand more challenge and more interesting features in a way that seems foreign to classroom learners. All of these elements together create a complex and invigorating system to learn, master, and test ideas within (see Figure 1).

Figure 1. Source: www.civilization6.net: Civilization VI: The Unofficial Site With All the Latest News.

Again, for me as a teacher, this kind of system was worthy of attempting to re-create in the classroom—even without the actual digital game. *Civilization* is and has always been a turn-based game. That means that the game moves forward only as you "take your turn," unlike other fast-moving "reaction" games that require you to press buttons quickly. It's really a giant spreadsheet under the hood, and it attracts gamers who like to strategize and think rather than twitch. So data management, long-range thinking, systems understanding, and discourse are actually part of the fun for this style of game. As a social studies teacher, I found it was a short hop to think about this kind

of experience as ready for my classroom. All I needed to do was create a game based on the core elements of *Civilization.* More broadly, many other digital games can be deconstructed accordingly and as an example, this chapter can be applied across games and subject areas for locally relevant learning. In Figure 1.1, you can begin to see more than just a blur of numbers; you can see the joy of managing resources, "world wonder" construction, populations, and food while you build those troops (also see Figures 2, 3, 4, and 5).

When we seek to "teach" high-level thinking across subject areas, this kind of complex system offers potential that basic memorization of facts simply does not provide. In my opinion, these are the greatest games that digital media have to offer. I can learn, manage, process data, test theories, and develop attention to detail over hundreds of hours. Interestingly, so can my students.

Figure 2. The game did get prettier: Civilization I, III, IV, and V. This screen shot is from Civilization I. Source: acepatrol.wikia.com.

Figure 3. Civilization III. Source: www.gamershell.com.

Figure 4. Civilization IV. Source: www.metaboli.co.uk.

Figure 5. Civilization V. Source: www.dualshockers.com.

WHY CREATE GAME EXPERIENCES IN THE CLASSROOM?

As a teacher, you have a choice. First, geography teachers can just *tell* students eight geographic elements that encourage human growth, *test* the students to see if they heard you, and *grade* them based on their ability to take notes, review, and score well. This is common. It makes sense and it's direct. Yet *"tell, test, and grade"* has never been my own learning process. After a year of trying, I failed miserably to teach that way. Even exciting topics rarely got positive reaction from good students—it was more like obedience or compliance. Moreover, a lecture on geopolitical interaction was not what eighth graders woke up in the morning excited for, nor did it provide a chance to interact with, encourage, and give feedback to student thinking. Test scores were predictably based on homework habits and rarely (never?) did an entire class show mastery of a topic. So *tell, test, and grade* was not a reasonable choice for me. As direct and obvious as it is, it also doesn't have the results I want.

A second and more rare approach to teaching is to *"design, watch, and react."* Teachers can *design* and explain an engaging challenge, project, or experience, allow students class time to work on the task while they *watch* for student engagement, and *react* when they see behaviors and thinking they are looking for. Using a few prep hours, I visited the classrooms of teachers who used this option and saw that they spent more time circulating the room, praising students, and giving constant reaction to work they were excited about. The result was that entire classes did engage, content was learned out of interest, and their test scores were equal if not better to those using the first option. More important, these were classrooms where students learned about life, how to work with people, and how to solve problems effectively.

Games are designed experiences that allowed me the ability to watch my students and react to their cues around a topic area. Some become frustrated that this pedagogy doesn't fit neatly with *tell, test, and grade.* Games do not "get" a student to learn; they instead invite a learner to play with a problem. Teachers can build on classroom gameplay to share information naturally, coach social skills, build on critical thinking, evaluation, analysis, and synthesis of experiences, and/or simply create passion around a subject area. If your goal is to tell a set of facts, use lectures. If you want to see your students explore, invent, invest, discover, and interact, try *WarLords!*

Being a lifetime player, I knew for myself that learning was the result of my experiences, not the prerequisite. During three to four years of teaching, I had already gotten more and more comfortable building games into class lessons, presenting scenarios and problems to students, and challenging them to dig in deeply to the topics. Before you read about *WarLords!* or any of the games used in classrooms, this primary approach needs to be understood. Games do not teach; they provide problems and experiences from which a certain kind of teacher can *watch* and *react* to students.

WARLORDS!: THE GAME

Designing the game for class meant some investment. Planning the rule set, organizing materials, and testing gameplay takes preparation time. Before class time, I selected the region of the planet that we were covering in class. (A side note: Using the region as a game board fueled outstanding location test scores later.) Then, I invited a small group of students to stay after school and help build the game boards for class. They volunteered and we played music while we shaded in six large maps

for lamination. We used an overhead projector and a line map to project an image of Southeast Asia onto a 3'x3' sheet of butcher paper.

Next, students traced the maps (see Figure 6), covered all the land area with a grid of 2"x2" squares, and shaded in the squares based on physical maps found in our textbook. No square could have two colors, so students had to "pixelate" the smooth lines in the textbook images to corresponding areas on the game boards. Printing a simple spreadsheet table (square the cells, use bold borders, and no "fill") over an imported map can create a guide for student shaders (see Figure 7). Green squares were flat lowland, orange squares were hills/lowlands/plateaus, and red squares represented mountainous areas. I keep all physical titles on the map to help students memorize features as they play. Using rainfall maps, students used heavy brown borders to represent arid territory. Students then drew in blue lined rivers and oceans (see Figure 8). We shaded everything on the map to make it pretty and easy to see, and then we laminated the game boards.

Figure 6. Trace a 3'x3' blank map.

Figure 7. Add grid and guide (small scale).

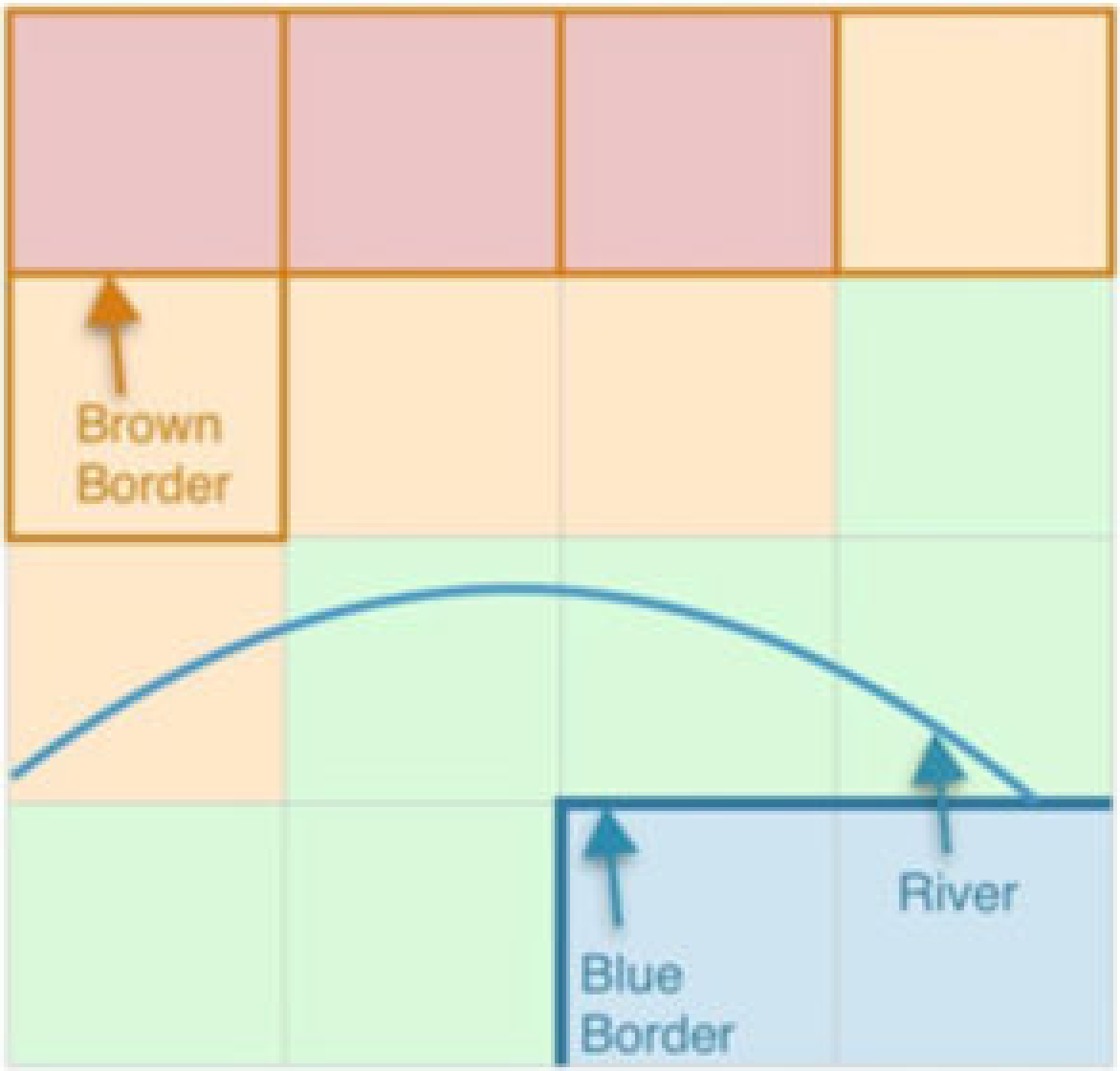

Figure 8. Have students use the guide to shade the large map so that each square has one color. Use a precipitation map to highlight arid areas with the brown border and darken key rivers and coastlines. The map will look pixelated, but it will be much easier to play on.

You will now probably have a small, excited group of gamers who have already helped you make the boards and are talking up the activity to classmates before you even bring it to the classroom. After raiding the supply closet for overhead pens (water erasable), water spray bottles, and a box of rags, I prepared to explain the game to students.

Of course, not all students are strategy gamers. So the first point I made as they walked into class was that I appreciated that not everyone liked strategy games, but that I thought this was worth attempting. I expected that they be good sports and try to learn the game as best they could. Second, playing the game was not connected in any way to student grades, only class participation. I promised them that if they learned the game well enough to teach others how to play, then everything they needed for the test was built in—as you'll see below.

After explaining the context, I presented the game itself. For the next couple of days they would have the chance to test their mettle as a world leader managing an empire! But there were a few rules that all world leaders needed to abide by because they were natural laws (and geographical concepts). Again, this kind of gameplay and structure is not unique to geography; you can use this as a template for any game with rules that frame concepts. Below are the basic rules of the game and suggestions for the teacher—look for how the "teaching" is done after the game is explained. The rest is repetition and fun.

THE RULES

First, the game is played in turns with 4-5 players using a game board. Each turn can represent any duration of time (years, centuries, or "ages"). Each turn has four phases, called:

1. Growing,
2. Moving,
3. Resolution,
4. Building.

Start with a very basic introduction to growth rules and then have students select one square on the group maps to start their empires. You can wait to explain each stage until the class has played to that point. So "Day 1" may include only a few rounds as players get the hang of the game rules.

1. Start and Grow Your Empire

Growing your empire is essential. Through time, humans make more humans. The core goal of the game is to prosper and build the largest population (not territory!) among the four players on each board. The players can attack each other, but like in *Civilization*, you do not need to fight to win; in fact, the more you stay out of costly conflict, the faster you can grow! I scaled the game by introducing only simple growth rules that are obvious to Iron Age leaders. For each turn, a square on the board produces "babies," based on a variety of factors, such as arable land, freshwater, and expert management by the emperor. On the board, write these growth numbers before playing the game:

Green squares (flat lowland)	20 people
Orange squares (hilly lowland)	10 people
Red squares (mountains)	5 people
Brown borders (arid territory)	½ the above growth rates
Blue rivers/coastline	+5 people

Most students will learn how to add quickly as their empires grow. Starting with one square is easy, but in a few turns they will be tallying (and memorizing!) growth factors at a massive level. In addition to memorizing the game rules, they may also ask questions such as, "Why do mountains get less growth?" Notice that the core game rules include the lessons of freshwater, coastline fishing, arable land, plains versus highlands, and is played on a real-world map. Much of your teaching can happen during explanations of the basic rules—change the rules to suit your needs.

On Days 2 and 3, I introduce new factors that add new elements to the game. Students even began to talk over lunch about what historical elements I might add. By catching me in the hallway to guess, they could actually give me ideas for what to add: "Hey, Mr. Dikkers, are you going to let us irrigate our lands?" or "What if we could build mines in the hills?" In the end, have fun with these moments and use them to cover terms and ideas relevant to your standards. Consider a stock response such as "Hmmm, why would I do that?" and let students build geographical arguments from "real" facts. Also consider add-ons that exponentially push the mathematics and increase population. For instance, these learning moments led to my use of historical "add-ons" including:

Food preservation	Double all people production/turn
Cities	Double people production on that particular square/turn
Roads/bridges	+2 people/turn
Boats (fishing)	+5 people/turn
War torn	Population does not grow after a square changes hands
Irrigation	Ignore a brown border

All add-ons "stack" with each other but food preservation and cities always tally first. So a square can be green (+20), with food preservation (20×2=40), and *then* coastline (40+5=45) and boats (45+5=50), and a road (50+2=52). This player would add 52 to whatever mobile population was already written on the square. Use the water spray and towels to erase the old number and replace it with the new total.

2. Moving Your People

After all the students wrote the number of people on each controlled square (using the erasable pens), they could choose to move them. All players wrote their moves on the board at the same time and had a chance to review opponents for legal moves. We did this on the game board to save time, and we justified it with the idea that no army moves without the other side's generally knowing where (with scouts or supply lines). Also, the public knowledge of moves helped quick learners to help and correct those who were still learning the game rules—encouraging players to reinforce and teach each other. Movement rules included:

Each "person" can cross to one neighboring square in any direction.

Coastlines and rivers: +1 movement per turn

The simpler I kept movement, the less confusion in the game. I usually didn't introduce many historical elements to movement other than the obvious:

Roads	+1 movement
Railroads	+2 movement
Generals	+2 movement (for troops "moving" with them)
Boats	+3 movement over sea/coastline squares

Once all players say they have their movements marked, using arrows, on the board, they agree to move to the next phase—*Resolution*.

3. Resolution of Movements

Occasionally, multiple players want to "own" a square on the board. (Historically, this has happened on occasion, too!) In these cases, players resolve all uncontested moves first, and then they sort out ownership of each square that has two players through a contest, or battle. Winning or losing a contest does not affect (or allow people to return to the movement phase!) the movement markings from the previous round.

Squares are not sharable, so players cannot ignore an invading force or allow "free passage" as the residents of the square have to support the troops. Also remind students that this isn't a military game; it's an empire game. The number of people on a square represents the expansion and control of the empire, not just "troop" movements.

If both parties have chosen to move into the same square, they are not allowed to retreat or defend. If one party attacks another (moves people into another empire's square), then the defender does have the option to run, or retreat all troops to an adjoining square the defender owns. In all other conflicts, both parties roll a 20-sided die (1d20) as a "random accidents of history and heroism" factor.[1] Then add their troop count (the number of people they declared they are moving from any number of adjacent squares) and geographic variables:

Green squares	No modifier
Orange squares	+10 defense
Red squares	+20 defense

After a few rounds of gameplay, I'll add new technologies that also affect battles. This will show that physical geography and human-environment interactions will affect the growth of empires. For instance:

Fortress/city	+20 defense (One/square)
General	+20 attacker (One/warlord)

Blue Rivers: If attackers have to cross a river to own the square, then +20 defense. (Rivers don't fit neatly into the grids so "Teacher makes the call on rivers; just ask.")

Roads and railroads also increase transportation of troops to a battle.

Do a little math, and the highest number wins.[2] For instance, Player 1 attacks Player 2 with 100 people ("troops" now that they are attacking!). This may be the most complex it gets, and I hope

1. 1d20 are available at any local game store.
2. Yes, we quickly identified students who had missed learning basic math skills, and I would quietly help, ask a helpful student, or use the special education aide/paraprofessional to teach and help them learn math computation in geography class.

you'll see it's not that bad. Remember, this is math that your students get to do. Player 2 has existing people on the square (+30 defense) and is reinforcing that square with +20 people from an adjoining square (+20 defense). The square in contest is orange (+10 defense) and "fortified" (+20 defense) in a previous turn's "Build" phase (making it active in this current turn). The defender can "retreat" any people who do not have a movement to resolve but decides to defend with both the resident and incoming troops. The attacker is led by a general (+20 attacker) of notable skill and strategic ability—trained to conquer the known world.

So Player 1 rolls a 5 attack on the 1d20 and Player 2 rolls a 19. That means 125 attack versus 99 on defense. Both lose 99 people in the fight. Tragic. Without the dice roll, the actual attacker troops would be 100. Removing casualties, subtract the 99 defender total, which equals 1 remaining attacker troop on the square and the territory switches to the attacking empire's realm of control.

Attacker	*Defender*
100 troops moving in	30 people defending + 20 support moving in
+ 20 general	+ 10 orange square
+ 20 fortification	
————————	————————
120 + 1d20	80 + 1d20
120 + 5 = 125	80 + 19 = 99
125	99
WIN	Loss: All units are lost

The attackers take over the square with 1 troop and their general stays alive. Losing generals are killed unless the attacker spares them. Theoretically, players may win a fight but have no troops to hold the square. Usually they figure out the math before attacking and calculate "acceptable losses."[3]

If you want to add more, or give in to player requests for more "authenticity," make sure to weigh this against your class time and the learning experience you are designing for. For most players this is more than enough complexity, but a few avid gamers may want to stay after school and modify the game more. For that reason, save fortresses and generals as game elements to add in on Day 2 or Day 3 for players to wrestle with as they gain comfort with the basic rules. Roads also strongly influence this phase after players get creative about "troop movement"; wait on these until later in the lesson too. Start simple. Finally, you'll need to explain "Building," the final phase of a turn.

4. Building

At the end of each turn, players "build" infrastructure as they see fit. The game represents this as residents who are no longer mobile and players "subtract" them from the square total. Each upgrade requires permanent residents, but these upgrades all have benefits that counterbalance the loss of mobile troops. If the land is later conquered, the residents do not return to the original builder. They

3. "Acceptable losses" is a ripe topic for later class discussions.

stay and support the production of their homes and businesses as part of the new empire. In game terms, when you build something you permanently subtract the count from the total number on the square.

In the first round or two of the game, I simply skip this step to keep the game easier. As the class becomes comfortable with the first three phases, I add infrastructure. To mimic the world wonder "cut scenes" from *Civilization III,* I would stop class for three minutes and unveil the new technologies with short videos or images—the bigger the show, the more rewarding. Classes would even compare notes at lunch as to which class was the furthest along.

The benefits are listed above; the costs are below in order of appearance:

Turn 3-ish	
Food Preservation	20 residents
Cities	100 residents
Turn 4-ish	
Roads/Bridges	10 residents/square
Boats	10 residents/square
Turn 6-ish	
Generals	50 residents (mmm… they need a staff!)
Fortresses	20 residents/square
Turn 8-ish	
Railroads	10 residents/square

You can introduce as many add-ons as you are comfortable with.

Time is of the essence and anything that encourages students to help each other do the math, keep up the boards, and move through turns is helpful. Playing the game to a full eight turns means that students need to come in and set up their game boards before the bell, work as a team to clean up at the end of the hour (we had a timed class-to-class competition), and be ready for each phase as quickly as possible. Also, so we could reuse the laminated maps the next period, classes needed to spray and wipe them down each hour *after* they used paper versions to write down their game progress. Have helpers start writing down population numbers before cleanup time. Paper handout versions of the map can help with this but are not necessary. Today I would have them take photos of the map with their cell phones. As the teacher, I would walk from group to group asking questions such as "Are you ready for moving?" or "Is this group finished building?" I would also help students wrestling with the math and have the entire class move from phase to phase together on the first day.

As groups get the hang of things, they will ask if they can just move when they are ready—let them, but have them run over and tell you each turn number because you'll put new technologies on the board for the build phase. That means that when one group gets to Turn 6, all the groups can see what is waiting for them if they move through the turns a bit more quickly. The orderly teaching of Day 1 will turn into a busy hustle on Days 2 and 3. Warn your neighboring teachers or arrange to use a space where students can make a bit of noise.

That's it. Rinse and repeat. The pace of the game will pick up as players learn the starter rules and students will embrace the gaming experience to different degrees. Encourage the nongamers to focus on learning the rules because the rules will help with the test. Yes, I gave a test at the end of the week covering the complex topic of geopolitical distribution. Each rule for each of the four phases was an element the students needed to understand in order to give rich feedback on the test (more on the test in the final section). There are a few more little life lessons to emphasize for students, as you are a guide on the side of their play.

A GUIDE ON THE SIDE

A few grand themes of history and geography start to play out in *WarLords!* If you are ready for the right teaching moments, you can help students think through some very mature themes and lessons.

For example, in the conflict example above, we could see before the fight that the attackers would win. They had an overwhelming force and the math is predictable. So why would humans defend, knowing they would die? Ask the students, "Why did you stay?" Perhaps they stayed simply for the sake of pride, or strategy, or a sense of inevitable conflict. Perhaps it was a sacrifice because they knew they had more units moving that way soon. Perhaps they simply wanted to take a chunk out of the attackers out of spite. The dice roll allows for plenty of player excitement when they roll and defenders lose fewer troops so the rule set encourages all of these reasons.

When talking to attackers, ask them why they attacked. Both sides lose population (when the ultimate goal of the game is an increase in population), but get this … many students will conclude that if they can control and profit from them later, some squares are worth the temporary loss of humans. They often consider land gains over human losses because the game has already depersonalized the "units" into a number. No matter how much we emphasize the value of life, students are shocked when they catch themselves thinking exactly like so many real generals historically have thought as they send "units" to their fates.

Overall, it costs more to attack than to defend, and attackers must always expect to lose units when charging defended ground. Students may argue this point, but it's a key lesson too … fighting costs people but gains land. Other strategy games reward taking territory without cost, but *WarLords!* accurately leaves the attacker slightly weakened and represents the cost of war—and still students will make war. As the game rolls forward there will be two winners: those who control the fertile plains (with overwhelming population), and those who stay out of unnecessary conflicts (with peace and prosperity) either through diplomacy (rare and glorious!) or by building an empire in the red squares (isolated cultures). The red squares will never "win" by the game rules, but you will find students who frame it as a "win" for themselves. They grew steadily and without conflict—surviving to the end of the game.

As a teacher, look for and point out these very real national identities and provide examples as you hear students tell you their strategies: "Oh, that's like Switzerland! Awesome plan!" When you do this, say it loudly and everyone within earshot will connect that Switzerland is in the mountains and has "thrived" by staying neutral—and it is still on the map. In each case you are helping students to connect their experience to real human-environment interactions as they play out historically at an international scale. The Swiss are connected, essentially, to their mountain territory.

Consider that at the end of the game, you can pull up a real political map of the region. In Southeast Asia, the maps will look nearly identical to the game boards, or, at least after eight to nine turns, the boards were well on their way to mirroring historical developments. How? With independent and intelligent strategists, why are the maps so similar? What is a "natural border," and what does that mean for human history? Help students notice isolating geography features (islands and mountains) and the relationship between food production and population growth. If students wrestle with and understand this idea, they can start to predict national behaviors by looking at geographical features and production capacity of a country. Think of the kinds of questions your students can start to build theories around because they have experienced the very authentic thoughts of an empire builder via *WarLords!* Why did the Mongol hordes end up in Europe and not India? Why did China wait so long to take over Nepal? How has Japan grown so strong despite having mountainous land? Why have Germany and France repeatedly grown powerful throughout history?

Finally, the name of the game: *WarLords!* It's a broken design feature! I hope you can see by this point that the game really isn't about war; it's about growth and land. My thought is that we need to be willing to hook students on an engaging experience. If this name initially sets you off, remember that it's not for you—it's for the kids. If you don't use this name, do pick one that excites players first. In my case, I'll admit I was trying to lure them into unnecessary attacks so that my nonconquerors would gain an early advantage. Wrap up the experience with a discussion that helps learners connect their experiences to realities in history and geography. Help them also to see that *WarLords!* may not be the best title for the game … what might be better?

This title for the game did get some phone calls from parents, but because I'd explained my goals to my principal ahead of time, and because I enjoyed explaining what we were doing (experiencing geography's influence on history), I thought the benefits of an exciting title was well worth a few phone calls and explanations. That said, as with other teachers I speak with who use games for learning, the parental feedback is usually overwhelmingly positive when you bring this kind of experience to the classroom—especially when students ask to borrow the boards at the end of the unit to play entire weekends at home.

ASSESSMENT

Here the lesson comes full circle. Using games for learning, even nondigital games for learning, requires that you allow students to experience the role of player first and then to speak from memory—not memorized facts but *re-membered* content. As a teacher, I had to trust the game would provide relevant experiences. This isn't easy. When I used *tell, test, and grade*, I could "guarantee" learning had occurred. But this is a kind of illusion of learning, because after the test, students didn't necessarily remember what they had memorized, nor did they particularly care to refresh their memories unless required to.

Alternatively, constructing learning by offering a game doesn't "guarantee" learning in any traditional sense, but the learning that does happen is *re-membered* material: Students can not only cite facts, but they can explain why the facts are relevant, connect them to other contexts, build theories, and even translate knowledge to artistic expression. In short, they don't remember studying for a test, but they do remember their frustration/joy of leading an empire (even an abstract one) through the ages.

The first year I tried out the game (without lecturing on the topics!), I gave students the test that I had given the previous year. Students came in on Friday and I prepped them for the test that they hadn't studied for:

> Okay, so we're going to review geopolitical growth and aspects of human-environment interaction today. I'm doing a sort of experiment here and it may fail, so please don't get worried about your grades. At this point, I'm just asking you to do two things; first, try your best, so I can get a good sense of if this game thing worked this week. Second, on the test, every time you want to say a game term like "add units," try to think of a real-world way to say that. Assume that everything in the game, and all of your strategic thinking, actually is connected. For instance, instead of saying "green squares add 20 units per turn," how might you say that in a "real-world" way?

Students get the hang of it fairly quickly: "Fertile plains can help people to grow population faster through time." Once they do, I'm ready to hand out the test. I should point out that this was one of the most difficult tests of the year for my eighth-grade geography students. If they hadn't "studied," they would bomb the test marvelously and offer humorous guesses.

On it were essay questions such as:

- Explain three geographic features that positively influence population growth.
- Explain three geographic features that negatively influence population growth.
- Detail how a river can play into geopolitical interactions.
- What technology most transforms the influence of landforms on populations? Why?

I believe that after a game experience with concepts embedded in the rule set, students will outperform your test to the point that you wonder if it's relevant any more. Traditionally, my students performed on this test in a standard bell curve. Some students fail, some get perfect scores, and the bulk of them miss a few questions but generally understand the ideas. After a relevant experience, learners can move from students to first-hand experts.

The first year we used *WarLords!*, my entire class scored an A on the test, but that doesn't fully explain their competency on the topic. Many students ran out of room explaining their perspective on the questions. Students asked if they could list more than three features if they knew them. Students asked if they could include things we talked about (mining, high-speed rail, and refrigeration) but that were not part of the rule set for the game. (I won't tell the whole story of a fellow teacher who wanted a "retest" for my students because she didn't believe that so many could perform that well on the test.) Learning assessment using a percentage measure of items memorized no longer held meaningful data. Instead the test measured the *degree of expertise* in students. The "common" core standards were simply too … common … to be meaningful for my classroom. On

one occasion a student complained, "The test was so easy, and you already knew we knew it all." To some, it was a waste of class time that could have been better spent on the next activity.

She had a point, but I did keep the test each year, because it was proof to me that games for learning were relevant and that I could trust them beyond my lecture, that guiding was actually a more powerful learning pedagogy for me, and that my students could pass any test if I took the time to give them a worthy challenge. Common standards were no longer good enough for uncommon experiential learning.

Finally, and most important, the test was proof to the students that they could achieve at high levels. Students would take the test and visibly express surprise that they "knew it" all. Far too many students claimed that this was the first time they had really aced a test. Even today, as students are still overly exposed to traditional models of learning, they *need* to see that when they play, they learn. They need to see that their passions are actually their areas of expertise, and that choosing passions is an important choice they make.

Years later, I'm honored to tell you about *WarLords!* Former students have become teachers now and have contacted me for the game rules. This chapter is as useful to us as I hope it is to you. This was my first exposure to a great truth in learning: Gaming and play are qualitatively better than anything that students have to memorize and regurgitate. Just … better. Instead of *tell, test, and grading* learning, I can choose to *design* opportunities, *watch* the degree to which students excitably plan, strategize, plot, look for "cheats," create, add to, and advocate for new conditions, and *react* accordingly to tie experience to lifetime learning. If they do these things, they don't just memorize; they remember their experiences and become experts.