



Augmenting learning to get with educational reality

David Loveland and *Jim Wasserman*

Several years ago, I made one of those foolish Dad choices. Despite my wife's better judgement, I let my six- and seven-year-old sons watch *Men in Black*. What I thought would be a cool evening of fighting aliens turned into one of those nights ending with two kids afraid of going to sleep and a wife's "I told you so" glare. I stumbled onto a solution when my elder son came into our bedroom around midnight saying he kept waking up scared because he was afraid a giant bugman would get him. In the moment, a solution arose. I told my son

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that I kept special, super strong anti-bugman powder in the bathroom, so strong it could only be used in emergencies, but that it could keep bug monsters out of the house. With that, I went

into the bathroom, filled a small plastic bag with talcum powder, and spent the next 30 minutes walking around the house throwing the powder about the place with my son while chanting "Go away bugmen!". He then slept the rest of the night.

The point of the story I relate is not about showing myself to be a good parent (I abandoned any pretense to that title when I said to my wife "The boys might be scared at first, but by the end they'll be laughing."). What this incident demonstrates is a kind of teaching technique that too often is underutilised or even

forgotten. Consider when my son came into my room, professing his fear of bugmen getting him. I could have lectured him that, in fact, there were no bugmen, and that his view did not comport with reality. This 'cold water in the face' approach would have done little to alleviate my son's latent fears while demanding that he take a hard U-turn into reality in the midst of those fears. On the other hand, denying that there might be bugs in the house at all would create an unrealistic virtual world that might have placated my son for the moment, but then be shattered by the next day's discovery of some critter.

The answer, as my half-awake parenting mind stumbled into, was to take reality (there are bugs), take my son's perception of that reality (bugs can lead to bugmen) and move *forward* on that premise by adding another layer on top (there is a solution, anti-bugmen powder). Having been empowered to defeat the challenge, and having fun doing it, my son was ready later to then learn more about bugs, bugmen and aliens as we sat together at the computer looking such things up.

Augmented vs Virtual

This approach has a name, at least in the computer gaming world: Augmented Reality, or

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AR. In AR, extra information is digitally overlaid onto the real world to enhance the experience either for information or entertainment purposes. If you have ever been to a museum and listened to a 'virtual tour' on a headset while you look at the very real exhibit or pieces in front of you, then you have experienced AR. That these tours are misnamed 'virtual' demonstrates the somewhat confusing, but important, distinction between Augmented Reality (AR) and Virtual Reality (VR). In a nutshell, VR creates an entirely made up world that can be as divorced from reality and its rules (like gravity) as the designer wants, while AR takes what is real and enhances or overlays information to get more out of exploring our world.

This distinction is even more pronounced and important in education. Unfortunately, too much of our education system is structured like VR. We create an artificial world where subjects like history, science, physical education, etc. are separated into distinct, and unreal, classes without reference to each other. So too, the student's day is blocked out into delineated (and often arbitrary) chunks of time. Students are asked to read about things and solve problems that have no connection to their immediate world, such as a math/economics problem about securing a mortgage, but are expected to embrace such things because "it will be their reality in the future." Unfortunately, learning things because they will be important in the future is a poor motivator and weak sales pitch, as nearly every twenty-something who has to listen to retirement investment options will tell you.

AR, on the other hand, is an approach that has endless possibilities for enhancing the motivation and actual learning for students.

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AR teaching

A good example of AR teaching is the game, now a few years old, called GeoGuessr. I wrote about this as an educational tool back in 2013, when it was just catching on. With GeoGuessr, a player is placed, via their phone, tablet or computer, in some random place in the world via Google Maps. Looking around and wandering by using the arrow keys to navigate, the player looks for clues (climate, vegetation, road sign language, geographic and man-made features) to guess where they are. Points are awarded for how close the guess is to the actual spot. The game was a hit generally, but clever educators found it a boon to their classrooms. Kids vied for the highest score, all the while learning how to look at and process information (palm trees) for application (where do palm trees grow?). Turning human and physical geography into a fun game allowed teachers to impart significant information and processing experience for students. As Mary Poppins might say, that spoonful of AR helps the learning go down!

AR also taps into an especially challenging age to teach, middle school. In elementary school (Grades 1–5), students are concrete learners who pretty much take the world as the teacher presents it to them. Every parent of a child that age has heard plenty of sentences beginning with, ‘Teacher says...’ By middle school years (Grades 6–8), students start to develop abstract thought and processing. They also start to see that the world is inconsistent or not exactly how it might have been presented to them before.

Not everyone is a winner, not all kids are nice, and sometimes good doesn’t always beat bad. Lying is not always absolutely wrong, such as to avoid embarrassing someone. Presented with having to cope and succeed in a potentially chaotic world, tweens try to take control of their tiny corner of individuality and seek self-empowerment. Psychologists call this

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the search for seriation and classification, but a lay person would observe it as a preoccupation with putting things in some sort of order, from schoolyard arguments over which is the best sports team to which people or trends are ‘in’ and which are ‘out.’ Kids at this age also become involved with games and otherwise determining social hierarchy, from monster card games to cliquish rumor mongering on the play yard. Indeed, many such coping-with-chaos skills continue into adulthood, as we argue on Facebook and other social media about which people are the ‘good guys’ and who are the ‘bad guys.’

This is AR. We take reality, and we overlay our understanding for comprehension or entertainment value. It’s also what has fuelled the Pokemon Go craze, wherein people walk about the world using their devices to find and capture Pokemon that are hidden throughout our otherwise observable world. There might be a Pidgey on your porch, or that old clock in the center of the square may be a Pokespot to get more Pokeballs.

So if we all do it, whether in hunting Pokemon or in analysing the stock market or politics, why not tap into it more for education? This can be done with a few simple tweaks by the classroom teacher (while more professional AR educational programs are being developed):

Start where the students are. A teacher should not start with a ‘Kids know nothing’ attitude. Begin with the students’ perception or understanding of the concepts or situation as a base reality. What do they know about the world regarding this topic? What do they think of when they hear the word...?

Make education empowering for kids. Now the kids can add a layer on top. What questions, challenges, or problems do the kids see with reality as they perceive it? What are the issues, and what can be done to solve them (real and, perhaps, one crazy, fun solution)? During this stage it is important for a teacher to not discount fun as a motivator. As said above, future return on investment is not enough, so where is the engagement hook now for the student? Also, when making a game, it is human nature to have more fun winning than in making everyone a winner. If a teacher is worried about wasting

class time to make a lesson fun, then consider it an example of long term investment, as just discussed.

Finally, finish with time for the teacher to do an educational overlay. Here is the payoff for the classroom. The kids have enjoyed their time, but now the teacher must use his or her skills to show the students how they are better prepared to meet future challenges (in gaming and the real world) from what they have previously done. Why, historically, were there so many communal clocks in old public squares (that then became Pokestops) and why do we not have them so much anymore? How did you calculate the winning strategy, and under what circumstances might that strategy be useful in the future?

In following these steps, a good teacher can create their own AR learning environment, even perhaps with minimal or no electronic devices. People should remember that, while everyone oohs and ahs about the latest technology, and technology can enhance learning, the driving engine of learning has always been, and always will be, the student’s engaged and active mind.

2016 may be remembered as the year AR came to the forefront. It is interesting that this craze has arisen amidst a summer of intense American racial strife and a divisive election. My elder son (formerly fearing of bugmen), now a college student, tells me of hundreds of people gathering in the park in Houston, hanging together, collecting, and interacting like never before. As he postulated, perhaps the players, seeing the world as so divisive, have overlaid an activity that allows more genial, cooperative existence as an AR tonic. It’s not a tuning out of reality, as VR might have it, but a way to take bit of control and move more freely about the noise and chaos. Perhaps, both inside and outside the classroom, AR is the talcum powder we all need.

About the authors

David Loveland and Jim Wasserman teach at The Parish Episcopal School in Dallas, Texas. Loveland has taught for several years in both California and Texas and is currently a middle school history teacher for social studies. Wasserman has taught for many years in Texas and currently teaches Upper (High) School history, government, speech and media literacy. also has had several publications in fields from Law to Education.

They have previously published in *Education Today 2013 Vol 13 (3) pp.30*. Neither has any business connection to Pokemon Go or any other program mentioned in the article

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