Magic: The Gathering as a Tool For Education

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**Abstract**

The information and research conducted for the purpose of this article is to posit how Magic: The Gathering has possible benefits to students or just for educational purposes. With the education system often times being criticized for many reasons, it is more beneficial to discover new ways to help educate our students and children, and this paper focuses on one possible upgrade or alternative teaching method. As a collectible card game, there is a lot of room for scrutiny as to whether or not a card game actually has positive results for education. Data that supports the claim that there is benefits was collected through ten participants through an experiment with fifty percent of the participants being players of the game while the other fifty are non-players of the game. The data along with the analysis of information points to parents and possibly schools not relying but should use Magic: The Gathering as a new medium for education.

**Introduction**

The primary focus is about Magic: The Gathering and the impact it can have on education. The reason why this is important not only to you as a reader but as a person of concern is that it is influenced by a criticism that the education system faces. With complaints and reasons for people not to believe in the education system, ranging from the goal of reaching standards to education not being backed, there needs to be ways to revive the education system. One possible way of doing this is through the inclusion of Magic: The Gathering. With Magic: The Gathering having ways of inducing thought and reasoning along with basic skills that are leaned in school, it could set a standard for new ways to teach.

**Problems With our System and a Solution**

 It is common to believe that education is our future. Often times though, people have overlooked our education system and assumed it is doing its job. One overlooked aspect of a flawed education system is that "Students aren't expected to meet high standards..." said by John Hood of the Foundation for Economic Development (FEE). With schools not enforcing a regulated academic standard for students to reach, it could be argued to look for a better source for education and academics. It is actually through various methods and mediums, such as home-schooling and online classes, that have the possibilities of changing the stigma of a declining education system. One of these methods is Magic: The Gathering. As a card game, it has a negative connotation of being a distracter than an enabler of education, but as we examine several aspects of the game and how we can implement it into primary and secondary education as a mean to vary teaching methods and increase dogma that learning is easy and exciting, there could be a possibility of seeing a positive rise in education, such as the rising of standardized test scores.

**Magic: The Gathering**

Magic: The Gathering is a collectible card game created in 1993 by Richard Garfield and parent company Wizards of the Coast. Inspirations of the game come from a plethora of fantasy and science fiction genres, with features of elves and goblins, knights and monsters, angels and demons, and many other beings of the such. In the game, there are five basic colors of mana which represent an idea. The color white represents order, blue represents knowledge, black represents greed, red represents passion, and green represents nature. Also in the game are featured special characters in the overall story of the game known as "planeswalkers" that have their own individual characters, motivations and abilities, such as the telepath Jace Beleren and the pyromaniac Chandra Nalaar. Often throughout expansions of the game, Wizards has taken players through what is known as the "multiverse", which is described as the multiple worlds being linked by energy, and its many planes, or worlds, in it. Throughout Magic history, we have been to planes with a variety of inspirations as well, such as the feudal Japan themed plane of Kamigawa and the Greek themed plane of Theros.

The physical card game itself has many different mechanics that can be learned in a matter of hours but take time to apply properly on a consistent basis. To begin with, it is important to have a Magic library, or deck. There are ways to get a deck, ranging from buying from your local Magic seller or just borrowing from other players, but the most fun is through making decks. Typical deck construction would consist of forty percent land cards, otherwise known as your mana source, and sixty percent non-land cards, ranging from creatures to spells, known as instants and sorceries, artifacts and enchantments. What enables this to be the most analytical or creative part of the creation process is that the creator has an entire library of cards to put in the deck. Discovering synergies or finding unbelievable combos are what makes the building part he most interactive part. Above all though, it is you that makes the cards and decides what makes the cut and what stays out.

The actual game play of Magic is as simple as another trading card game available. A game begins with two players and a turn order with the player who goes first not drawing their card while the player who goes second gets to draw their first card from their library. There are several phases in a players turn explained by Ted Knutson as he explains the structure of a turn: beginning, first main phase, combat, second main phase, and end phase. Each phase has several steps in itself. During the beginning phase, you have untap, upkeep, and draw steps. In these steps, you untap, or turn cards that are turned sideways right side up, may play any spells, and then draw your card respectively. In your first main phase, you have the chance to play your spells. During this phase, you may play any land if you haven't yet and play a creature or non-creature spell while you still have the priority during your turn. Next you have your combat phase which comprises of a few steps: beginning of combat, declare attackers, declare blockers, combat damage, and end o combat step. In the beginning of combat step, it is the last chance players have to cast spells. In the declare attackers step, it is the chance for the active player to declare all creatures that player is attacking the enemy with. It is worthy to note not all creatures may be declared for attacking. The following step, declare blockers step, is where the inactive player decides to block the attacking creatures. The next step, combat damage step, is where all blocking creatures fight and all unblocked creatures deal damage to the enemy. Final part of the combat phase is the end of combat step. During this step, all the damage will be dealt and creatures will move from the table, or battlefield, to the graveyard and all life totals will be reduced. Then there is second main phase where the active player will get to play a land if one wasn't yet and cast all spells wanted. Finally is the end of the turn, where the active player must discard, or put cards from their hand into the graveyard, until they have no more than seven cards in hand and all creatures are returned to their base health, or toughness. Those are the phases and each of those respective steps of a turn in a game in Magic.

**Application in Education**

Without a doubt, when we hear games and education we think, "How is this useful?", "Why play a game?", "Does it matter?" And the answer to those questions is that Magic: The Gathering has potential to be the new method and medium of learning. To see how Magic can be applied to our current education system, we need to understand problems that we currently have or have had in our system today. The National Center for Education Statistics range from, "... student apathy, poverty, student absenteeism, student disrespect for teachers... and student tardiness." We see a correlation with the apathy, absenteeism, disrespect, and tardiness in that they are all accredit to student interest while the poverty limits how much resources a student and his or her family have available. If a student has no interest in going to school or in learning, there already is a problem both with the system and with the student. One possible solution to this problem is to shake how students view learning. This is where Magic: The Gathering comes into play. Rather than encourage students to meet the standard; which in and of itself is another problem we have today, try to relate other subjects in different levels of education to playing Magic. For subjects as simple as math and vocabulary, it is best used to practice basic algebra and practice vocabulary for younger students. As explained by an author who goes by the alias "bigwoodmtg" on the online Magic fan site *Essential Magic*, "Mathematics is very important in Magic" and "Even the most basic form of Algebra can be practiced through play". Both those statements are accurate. In Magic, each card has a cost, its concerted mana cost (CMC), to pay in order to play. To pay for the CMC of a card, it requires the mana, or colored land and colorless mana, as explained above. White mana is generated through plains, blue is generated through islands, black is generated through swamps, red is generated through mountains, and green is generated thorough forests and colorless mana is symbolized through a gray circle with a number in them. By adding your tapped mana together, you are able to determine whether you have enough mana to pay for a spell or an ability. With younger grades, it is easy to teach the subject of math and counting, but hoping that they retain the information can be considered wishful thinking because they see it just as it is. By including some interesting ways of incorporating mathematics and things children find interesting, not only will the basics of mathematics be retained, but the children will want to learn more. The idea of Magic and math can be applied to Vocabulary and English. With teaching students and children the proper ways to pronounce and enunciate words, it can be done but not guaranteed that the lesson learnt will be retained. As you explain Magic to the students and children about Magic, you teach them about a multitude of names and terms from the names of lands to the variety of mechanics ranging from trample to transmute. By incorporating he interesting and fun.

One key note is that Magic is a game that is centered around creativity. Currently, there are four competitive formats of the game: standard, modern, legacy, and vintage. Within the game itself, there are ranges of formats from the competitive four, pauper, commander (formally known as Elder Dragon Highlander), draft, to many others. Within each of these formats, there are a list of comprehensive rules designated by Wizards of the Coast to ensure fairness and enjoyment for all players. With the four competitive formats, the rules are pretty similar to each other, decks must contain a minimum of about sixty cards with an additional fifteen cards for sideboard, can not contain more than four copies of a single card other than basic lands, cards in your deck can not be on the banned list if there is. When thinking about diversity, it has to be stated that each player has either diversity or limitations. When we think about diversity in competitive Magic, we need to observe how we, as players, have such a wide variety of creation. There are so many available combination of colors a player can choose to play, from the five single colors to the five "allied" and "enemy" dual colors, and the five "wedge" and "shard" tri colors and all five colors. With that being the basis for each deck, there are a wide variety of cards available. If we are able to bring that creativity into the classrooms, there is potential for teachers to vary the style of teaching instead of just reading through a standardized book and using standardized tests only for them to just meet or reach them, teachers are able to use the game to encourage student creativity. With the ability to show students how diverse a game can be, it shows students that being different is acceptable and wanted. Diversity in the classroom is a wanted thing. By incorporating diversity, there are no reasons for our students and teachers to not be able to reach new heights in terms of ideas and originality. One more thing to understand is the amount of limitations that both competitive Magic and classrooms. With competitive Magic, we need to understand that there are regulated lists to ensure fairness and fun. The same concept is the classroom, despite the result is enjoying the game, it is meant to be used as an educational tool. If used in excess and not for the purpose of teaching, the application of Magic in the classroom ruins the intended purpose. As we learn and understand that our creativity has diversity but needs limitation, we are able to apply new methods to our educating systems.

**The Price To Pay**

The biggest downside to Magic is that it isn't the cheapest hobby to start. Wizards often sells Magic products in the form of booster packs, booster boxes, intro packs, fat packs, special decks, and many other products. It is not cheap to start playing Magic. To get a pre-constructed intro deck, average prices are about fifteen to twenty dollars. The problem with this is that most of the cards in the product are not equivalent to the price you paid. The reason why this is a problem when trying to incorporate Magic into our education system is that students, unless they have a part time job, do not have a reliable source of income. Simply asking for money from their parents or family members adds up considerably knowing that buying one single product may not be enough for that player. The most popular product of Wizards are the booster boxes that they sell of a particular set. These boxes contain thirty-six booster packs and are priced between $100 to $120 or even as high as $140. Students who do not have money as available as others do are often unable to find that large amount of money readily available to them at an instant. Knowing that Wizards releases multiple products of a specific set for many sets also raises prices too if you choose to buy those products, you will be spending money that can be best used for other things such as utilities and for nourishment. Students who do not have this money available to them should be encouraged to save their money and choose what they wish to do with it. Knowing that students that suffer because of poverty limits their abilities only by so much. As they are in a more dire financial state, it is best that they save money for other needs instead. Teachers though do have a different situation. With a reliable source of income from where they teach, it is assumed that they should be able to purchase these products for their students. Though with prices ranging from $20 to about $140, it is not as easy to purchase multiples of products.

Another aspect to look at is that Magic: The Gathering is a game nevertheless. Wizards of the Coast have made the primary purpose is to entertain the players. Albeit, it has the ability to provide opportunities of learning, but the main purpose of its inception is to be played. Keeping that in mind, with it being a game, there is a chance that the players can be addicted to the game aspect of it and disregard other responsibilities. Moderation is the most important part about Magic. When players limit how much they play and purchase products, the more that they will be able to keep their priorities straight while at the same time, enjoy and learn from the game.

Despite the high prices of products, it is another aspect we can use for education. With its high prices and different valued cards, it can be easily applied to classes and courses that focus on finances and money management. Within the game, there is an ever fluctuating prices on individual cards that is attributed to popularity and use. That too can be looked over in courses dealing with statistics.

**Methodology**

It is one thing to assume that playing a game can positively influence people. There are studies shown that playing shooting games influence the reaction times of people and adventure style games incite curiosity about other places. How is it that playing Magic actually effects students academic careers? Several responses from both players and non-players influence students positively.

**Introduction of Experiment**

In an experiment conducted, five people, players and non-players, were asked to take a critical thinking and problem solving test. The participants of both we five students who each had varying majors in college. The main difference is that one group of five are players of Magic: The Gathering while the other five are not. What separates the players is that they have all played Magic: The Gathering for a varying amount of time, ranging from a few months, to a few years. The purpose for this variance is to see if the amount of time a person has played Magic: The Gathering has an effect on their problem solving skills and critical thinking skills.

**Participants**

Both players and non-players were using sample tests for both critical thinking and problem solving skills for the Graduate Management Admission Test (GMAT). The sample tests conducted can be found on the Major Test website. The purpose of choosing to use a sample test of the GMAT rather than the SAT or any other standardized test is to use diversity with testing. The participants are all familiarized with the SAT. Both the SAT and GMAT in the simplest form test for the same thing. By using another name that is not as familiar, the participants are unaware that the GMAT critical thinking and problem solving tests are no different than the SAT than name and in purpose.

The first group that were tested were the Magic: The Gathering players. The first that was tested was the problem solving skills. The average time it takes to complete this examination is twelve minutes and the total number of questions are ten. The test itself examines several mathematical functions such as basic arithmetic, conversion, geometry, and mathematical reasoning. The participants were asked to use calculator and used a spare piece of paper for doing problems that isn't on the question sheet. For this exam, the work they have done was not needed or necessary for the quiz. After they had been quizzed on their problem solving skills, they were tested on their critical thinking skills. What this was able to examine was the participants ability to think and reason with given detail. One key thing to note about both tests is that what was recorded is the time participants took for the test and the score that they received.

**Analysis of Results**

The results for the critical thinking examinations are similar for all five participants who play Magic: The Gathering. In accordance with time, all five participants completed the examination within six to eight minutes with the average time for all five being about seven minutes (See Appendices A). The time initially given for the sample test is ten minutes, so all the participants had within two to four minutes to spare for the test in terms of time. When looking at the results, a majority of participants, about 80%, scored an 83%, five out of six questions, on the test while only one person scored 100% (See Appendices A) on it, with the average being an 86.7%. When analyzing the results in conjunction with the time, the players scored quite well considering how much time was left in the test to show. With an average of seven minutes, it is fair to say that the critical thinking skills is much speedy. With the ability to read the information given and be able to select an answer is fast. With the majority of the test being 83% and above shows that with the Magic: The Gathering players have a majority of correct answers. Considering that the time spent reading and analyzing is quite fast and the answers they choose were mostly correct shows that they have such powerful analytical skills along with a fast analytical time.

In contrast, the participants who do not play Magic have a fast thinking time, but their answers are not as accurate as compared to Magic players. For both tests, the highest scores are both 50% (See Appendices B and C) and above and their best times are between five and six minutes (See Appendices B and C) with tests meant to be taken at ten and twelve minutes respectively. When comparing all five results, all participants have failed the test, with none higher than 50% for both tests. When analyzing the time it took for all participants, the participants turned in their test at quick speeds, much faster than the Magic playing participants. When comparing the results of each participant to the time it took, it shows that the participants have taken much less time in overall to complete both tests. It shows their skills of reasoning are fast, but in relation to the results, their results are not as correct. It is fact that the participants have taken less time to read and analyze the material given, but it is also fact that the participants do not have the analytical skills and ability are not on par with the Magic playing participants.

**Conclusion**

When taking into consideration that there are many other factors contributing to the education system as well as our own basic learning, it is the researcher's conclusion that with the help of Magic: The Gathering, it is possible and more likely than not a new way we can use to educate. Despite the possible and obvious downsides, there are many ways used to maximize that as a resource. It is shown through the experiment that people who have played Magic: The Gathering in fact do score significantly higher than those who do not play and do it consistently. Knowing the flaws of our current education system have strict limitations on our system whether it be through financial cuts or a lack of backing in it, schools are able to invest in Magic: The Gathering as a way around budget cuts or with a lack of interest from both students and government. More times than often, people overlook ways that are innovative and interesting because it is not part of the norm or something common. As we learn though that different is acceptable, we are able to allow the new creative things in life to possibly influence us. As we take Magic: The Gathering, we have the ability to be able show innovation and possibly start for an education system that most people can have faith in.

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| **Problem Solving Skills Examination (Magic Players)** | Time (Standard) | Time (Per Participant) | Score (Per Participant) |
| **Appendices C** |  |  |  |
| Participant 1 |  | 11 Minutes | 9/9 (100%) |
| Participant 2 |  | 8 Minutes | 8/9 (88.9%) |
| Participant 3 |  | 7 Minutes | 7/9 (77.8%) |
| Participant 4 |  | 8 Minutes | 9/9 (100%) |
| Participant 5 |  | 9 Minutes | 8/9 (88.9%) |
| Average | 12 Minutes | ~ 9 Minutes | 8.4/9 (91.1%) |

**Appendix**

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| **Critical Thinking Examination****(Magic Players)** | Time (Standard) | Time (Per Participant) | Score (Per Participant) |
| **Appendices A** |  |  |  |
| Participant 1 |  | 6 Minutes | 5/6 (83%) |
| Participant 2 |  | 7 Minutes | 6/6 (100%) |
| Participant 3 |  | 6 Minutes 30 Seconds | 5/6 (83%) |
| Participant 4 |  | 8 Minutes | 5/6 (83%) |
| Participant 5 |  | 6 Minutes | 5/6 (83%) |
| Average | 10 Minutes | ~ 7 Min | 5.2/6 (86.7%) |

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| **Problem Solving Skills Examination (Non-Magic Players)** | Time (Standard) | Time (Per Participant) | Score (Per Participant) |
| **Appendices D** |  |  |  |
| Participant 1 |  | 7 Minutes | 5/9 (55.6%) |
| Participant 2 |  | 8 Minutes 30 Seconds | 4/9 (44%) |
| Participant 3 |  | 12 Minutes | 2/9 (22%) |
| Participant 4 |  | 12 Minutes 30 Seconds | 2/9 (22%) |
| Participant 5 |  | 8 Minutes | 3/9 (33%) |
| Average | 12 Minutes | 9.6 Minutes | 3.2/9 (35%) |

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| **Critical Thinking Examination****(Non-Magic Players)** | Time (Standard) | Time (Per Participant) | Score (Per Participant) |
| **Appendices B** |  |  |  |
| Participant 1 |  | 5.2 Minutes | 1/6 (16%) |
| Participant 2 |  | 5 Minutes 30 Seconds | 3/6 (50%) |
| Participant 3 |  | 6 Minutes | 2/6 (33%) |
| Participant 4 |  | 6.2 Minutes | 3/6 (50%) |
| Participant 5 |  | 7.75 Minutes | 2/6 (33%) |
| Average | 10 Minutes | ~ 6 Minutes 13 Seconds | 2.2/6 (36%) |

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