

## COMIC-ECON: USING AMAR CHITRA KATHA COMICS TO TEACH ECONOMICS

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### Abstract:

Students are exposed to a variety of sources of information and entertainment during their formative years. While this has certain downsides to academic pursuits, it also presents opportunities since students are interacting with ideas and concepts in different settings. One of those settings is the comic book and the closely related graphic novel. Comic books are actually an older entertainment source but seem to have an enduring appeal and even occasional re-births as some get adapted into movies and video games. These relatively short, colorful, entertaining magazines have been popular for decades in many cultures, and some characters are very well known and, as a result, present an educational opportunity. Using comics to teach several different topics in economics expands the toolbox for the instructor to use either in schools or undergraduate classes.

Key Words: Amar Chitra Katha, comic books, cross-cultural

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### Introduction

Numerous people have written how to teach economics to undergraduates in an innovative way. A book edited by Becker and Watts covers different ways to teach economics using sports, drama, literature, etc., (Becker and Watts 1998), Hall discusses using music to teach undergraduates (Hall, Lawson, and Mateer 2008), and Leet and Houser explore using movies to teach undergraduates (Leet and Houser 2003), Sexton (2006) uses movie clips to teach economic concepts, and yet another uses great books from western civilization to teach economics to undergraduates (Hartley 2001). Further, one course had a travel component to teach economic development to undergraduates (Bose 2017).

Some recent work has been done using comics in economics courses, but these comics are from western nations (Lawson 2006, O’Roark 2017). The Lawson (2006) paper provides a number of comic strips with economic content and provides questions for thought that can be used in the classroom. O’Roark (2017) use the superhero comics to teach numerous economic concepts such as scarcity, specialization, and opportunity cost. Our innovation attempts to address two characteristics: creative teaching and a cross cultural experience. We adapt a popular Indian comic book series called *Amar Chitra Katha* (ACK) (translated: Immortal Picture Stories) and highlight the economic activities, concepts and principles contained in the stories

ACK comics were started in 1967 by Anant Pai, who is known as the founder of the Indian comic industry. The ACK comics were a huge success especially in the 1970s and were affordable for the middle and lower middle classes (Sreenivas 2010, 14ff). However, they saw a

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decline with the arrival of television, satellite television, and the internet, but they are now being adapted for television animations (Bajaj 2009). As of today, ACK has sold over 100 million copies of 400 unique comics in over 20 languages.<sup>3</sup>

### **Motivation/Theory**

Many undergraduate students, primarily due to their age, have limited exposure to non-Western stories, worldviews and culture. It is natural and frequently the case that students use their experiences as a way to see and understand the rest of the world. With increasing flow of information and ideas, growing workplace diversity in terms of culture, language, and values, being exposed to non-Western stories would be a way to help diversify and internationalize the curriculum.

In his article “Assume anarchy?”, Rajan (2004) encourages economists to avoid thinking the world everywhere is like the developed west. He refers to this assumption as the “Complete Markets Model,” or we can think of this as the Garden of Eden (GoE) assumption. In this model, “everyone is fully informed; every eventuality is anticipated by contracts; all contracts enforced by omniscient, incorruptible courts; and governments automatically take care of all the public goods and interfere in none of the private ones.” Deviations from this GoE have to be justified, and usually only one step deviations are allowed. We see this mindset in western comics and in many other aspects of western culture. Everything works well, except for the plans and actions of one evil person who wants to take control of the world, or some part of it, for his own selfish ends (the deviation from GoE), which a superhero (the solution) thwarts, and the comic society returns to the GoE state. We see this similar general motif in classic American western movies, television crime shows and other pop culture media. What Rajan suggests is to assume anarchy instead, a world where “nothing is enforceable, property and individual rights are totally insecure, and the enforcement apparatus for every contract must be derived from first principles” (Hobbesian world) (Rajan 2004). For many of the poorest countries, it is better to assume anarchy as a starting point. While for India neither the GoE nor anarchy is the appropriate starting point in most instances, comics written from a different cultural standpoint can provide valuable insights for students inculcated on GoE assumptions.

The other aspect of this approach is that people the world over like and remember stories much better than sterile lessons. McCloskey has emphasized the value of storytelling in economics. “There seems to be two ways to understand things; either by way of the metaphor or by way of a story...” (McCloskey 1990). McCloskey makes the point that people like stories and remember them and economists would do well to explain their points in story form, “It is not controversial that an economist is a storyteller when telling the story of the Federal Reserve Board or of the industrial revolution... The applied economist can be viewed as a realistic novelist... The theorist too, may be viewed as a teller of stories though a non-realist, whose plots and characters have the same relation to truth as those in *Gulliver’s Travel* or a *Midsummer Night’s Dream*” (McCloskey 1990). Or, we might add as the characters in a comic book. Taking McCloskey’s point one step further is certainly not a stretch and does no damage to the point; if economists should and do tell stories, then economics teachers should use stories to illustrate and convey economic ideas and points.

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<sup>3</sup> <https://www.amarchitrakatha.com/us/about> (accessed January 26, 2019).

### Application in the Classroom

Of the 400 titles in the ACK collection, we reviewed about 25 titles in detail. Each title has several illustrated stories. We chose five of these stories we thought illustrated economic concepts in interesting and creative ways and fit into the class in which we intended to use them, which was an Economics 101 class at Regent University (Virginia Beach, VA, U.S.A.). Economics 101 is a general education course for students majoring in a field not related to business or economics. This particular version was a 3-credit hybrid course that met over a compressed 8-week schedule. A hybrid course meets once a week for two hours and has a significant online component, which means that the student is more responsible for taking the initiative for the learning process. This section was taught in the early spring semester (January-March) in 2019 and had 42 students enrolled. The primary textbook we used in this class was *Common Sense Economics* by Gwartney et. al. (Gwartney et al. 2016), plus other supplemental materials were used.

We incorporated the five comics in two ways; four of them were used as the material on which the discussion boards were based, and one was assigned for which a three-page essay was written. The course had a total of 4 discussions and 4 essays; hence all the discussions used comics, and a quarter of the essays used comics. Each comic used is briefly described below as well as the associated assignment for the discussion board:

#### *The King Elephant and the Mice*<sup>4</sup>

Summary: The king elephant spares the lives of seemingly insignificant mice. When hunters trap the elephants, the mice play a major role in freeing them.

Week 1 discussion: How does this story illustrate the value of trade? Also, some political leaders claim there is no value in trading with countries that are poorer and/or significantly different from ourselves. This story presents a different view. Look up America's trading partners, investigate a smaller one, and describe the value of that trade both in dollar terms and in what those imports add to the product diversity in America.

#### *The Dhobi's Donkey*<sup>5</sup>

Summary: A dhobi (washer man) covers his donkey with a tiger skin to facilitate theft of neighbor's crops from their fields. The donkey's ruse is uncovered, and the farmers kill the donkey.

Note: *The Dhobi's Donkey* also shows a story that starts from non GoE assumptions where poorly enforced property rights leads to vigilantism as farmers take matters into their own hands by killing a trespassing donkey instead of taking the owner, the dhobi, to court and seeking restitution.

Week 3 discussion: In the story the dhobi engages in deception to steal the farmer's millet, and the donkey gets killed. Use this comic and whatever else you think appropriate to explain why good property rights make for a less violent society.

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<sup>4</sup> Pai, Anant, editor. *Stories From the Panchatantra: The Brahmin and the Goat*. Amar Chitra Katha, Ltd. East Mumbai. 1972. 2010. Pp. 6-11

<sup>5</sup> Pai, Anant, editor. *Stories From the Panchatantra: How the Jackal Ate the Elephant* Amar Chitra Katha, Ltd. East Mumbai. 1972. 2010. Pp. 23-26.

*The Mother*<sup>6</sup>

Summary: This story revolves around two brothers; the older brother inherits a kingdom, while the younger brother, convinced that he too would be a good king, cheats at a contest and wins the throne of an adjoining kingdom. Relations between the two brothers start out friendly, but quest for more land and power leads to hostilities, and war is only averted when their mother intervenes.

Week 5 discussion: How does this story illustrate the perils of achieving power and office? How does this story illustrate the temptations that come with having power?

*The Dullard*<sup>7</sup>

Summary: Four brahmins (one being a dullard) set out to make fortune with their (magical) learning. Three brahmins, in a useless display of their abilities, resurrect a lion skeleton back into a living lion without thinking about consequences. The dullard, who has no learning but armed with common sense, warns them not to do it and is the only one to survive the encounter.

Week 7 discussion: In the U.S. there is a significant push both in policy and in culture for as many people to go to college and get a higher education. This is what economists call human capital. What does this story demonstrate about the having the right kind of human capital not just more of it?

The following comic was used for students to write an essay.

*Andher Nagari*<sup>8</sup>

Summary: A wandering guru and two students come upon a town in which every product sells for the same price. Later, when a crime has been committed, the ruler just looks for anyone to punish regardless of guilt or evidence.

Note: *Andher Nagari* also illustrates the non-GoE assumption where a dysfunctional price system and corrupt justice system result in some very perverse but logically consistent outcomes.

This story was used to ask essay questions about a functioning price system and its linkage to a functioning justice system: Describe in modern economic terms what is wrong with the town's price system. What assumptions does it make about everyone's preferences and budget? Does the theory that a dysfunctional price system indicates broader societal dysfunction make sense to you? Think about countries (past or present) that were/are known to be very unjust. Do they have a strong economy and functioning price system?

**Class Profile**

Table 1 presents some of the key characteristics of the first class we introduced to these comics.

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<sup>6</sup> Pai, Anant, editor. *Andher Nagari and Other Stories: The Golden Sand*. Amar Chitra Katha, Ltd. East Mumbai. 2010. 2017. Pp. 13-26

<sup>7</sup> Pai, Anant, editor. *Stories From the Panchatantra: The Dullard*. Amar Chitra Katha, Ltd. East Mumbai. 1972. 2010. Pp. 1-4

<sup>8</sup> Harishchandra, Bharatendu. *Andher Nagari*. 1881. reproduced in *Andher Nagari and Other Stories*, Amar Chitra Katha, Ltd. East Mumbai. 2010. 2017. Pp. 1-20.

**Table 1:** Key characteristics of Regent University Introduction to Economics Course

<b>Age</b>	High: 58 Low: 17 Mean: 25.4 Mode 18 (5); 19 (5)
<b>Class</b>	Senior: 6, Junior: 10; Sophomore: 9, Freshman: 4, High School: 1
<b>Gender</b>	Male: 11; Female: 25
<b>Academic Major/Discipline</b>	Education: 5, Interdisciplinary Studies: 4, Cybersecurity/Computer Related: 3, Criminal Justice: 3, Cinema/T.V.: 3, Leadership: 3, Communications: 3, Psychology/Clinical Psychology: 3, History: 2, Animation: 2, Government, English, Biblical Studies, Ministry, Political Science: 1 each
<b>Previous Economic Course work</b>	Military Course: 1 College: 1 High School: 12 None: 22

We incentivized the students to respond to the survey we used to measure the class' reaction to the comics, but it was optional, and there were some absences on the day we distributed the survey. However, thirty-seven of the forty-two students enrolled filled out the surveys and returned them.

### Results of Survey

We presented a short survey at the end of the course asking the students about their experience with the comics and ranking eleven different statements on a 1 to 5 Likert-type scale with 1 being strongly disagree, 3 being neutral and 5 being strongly agree. While our results are the first of their kind in analyzing the role of international comics in a US classroom, the self-reported data indicate both increased interest and increased understanding. We present the detailed results in Table 2 below but the results strongly imply that the comic helped learning both by illustrating the concepts and by being entertaining. Overall, 70 percent of respondents either agreed or strongly agreed that the comics had a positive impact on learning the material while less than 12 percent disagreed or strongly disagreed.

**Table 2:** Survey Results of Students using Likert scale with 5 being strongly agree and 1 strongly disagree. Those scored 1 & 2 are added together, as are 4 & 5.

<b>Statement</b>	<b>1 + 2</b>	<b>3</b>	<b>4 + 5</b>
The comics increased my interest in the course material.	8.1%	24.3%	67.5%
The comics piqued my curiosity about economics.	21.6%	21.6%	56.7%
I feel the course could be improved with the inclusion of more comics and similar material.	10.8%	21.6%	67.5%
I felt motivated to explore where I could see economics principles in other areas such as in other classes, art, entertainment and literature.	10.8%	27.0%	62.1%
The comics helped me more clearly understand the	16.2%	16.2%	67.5%

economic issues discussed that week when compared to discussions without comics.			
<i>The comics helped me to be able to explain economic principles in my essays, discussion posts or even in classroom and informal discussions.</i>	8.1%	8.1%	83.8%
<i>I feel I will remember more of the material that was illustrated by the comics than I will for material that was not illustrated by a comic.</i>	8.1%	13.5%	78.3%
<i>The comics helped me understand fundamental concepts in this class and how they apply beyond the world of business and government.</i>	10.8%	24.3%	64.8%
<i>Using the comics as the source material for the essay assignment made me think more creatively about my essay than just a stated topic does.</i>	10.8%	8.1%	81.1%
The comics helped me apply the knowledge created in this course to my other course work.	21.6%	27.0%	51.3%
The comics had a cross-cultural element that I appreciated.	2.7%	5.4%	91.9%

While the results across all the questions were very affirming that the comics had significant value to the students, we note a couple of standout responses that over half the class felt motivated to explore and see economic principles in other disciplines and other areas of life. In a class of diverse academic majors, we thought this was a particularly good result. However, we also note that motivation did not immediately translate into helping with other classes as only half said the comics helped them see economic ideas in their other courses. Another notable result is that almost 80 percent said they felt the comics will help them remember economic concepts better, and 64 percent said it will help them see the concepts beyond the class and beyond the world of business and government.

One result we were particularly pleased to see is the cross-cultural question. Regent University has, as part of its educational mission, the following:

*Global Context:* In this course, we will study Economics within a global context. For Christians with a global perspective, globalization has the potential to provide sustainable income opportunities for isolated individuals, who can gain new skills and access to broader markets in which to exchange their goods ... So, as we read and gain content knowledge we will experience people, places and cultures very different than our own. In seeking to understand and appreciate the expression of their experiences, we will learn to value and appreciate their unique cultural attributes and the dignity of their environment, both of which are essential to interacting in a global context.<sup>9</sup>

<sup>9</sup> This is from the syllabus used for this class. While this goal is applicable to Regent University classes, the other coauthor who teaches at Indiana University (East), a state school, has also similar statements. For example, under the general education framework, one-point states, “[r]ecognize the extent and impact of diversity among individuals, cultures, or societies in contemporary or historical contexts.”

We see in the survey results that 91 percent of the responding students appreciated the cross-cultural aspect of these comics. Weaving meaningful cross-cultural experiences into a class, especially a compressed class of only 8 weeks presents a challenge and using these comics appears to be a good solution the students appreciated. Below are some student comments from the surveys on the cross-cultural aspect of the comics or appreciation for the different perspective the comics provide:

- Personally, I love learning about different cultures, so that was a plus. Also, these comics really did help me compare the comic to real world conflicts and economics.
- They were all entertaining and interesting... They brought a perspective to what was learned in class, and by having dialogue, I was able to see them even more differently. I think the curriculum is enhanced with their addition.

### **Selected Discussion Board Comments**

Beyond the self-reported results above we looked for evidence of learning by the students. Since most of the comics were used to motivate discussion board conversations, we reviewed those for particularly insightful comments and creative applications and provide a few here.<sup>10</sup> Obviously, we cannot know what these students would have said in another non-comic discussion but as stand-alone comments these seem to indicate some keen understanding:

- After reading King Elephant and the Mice, when asked to consider: "How does this story illustrate the value of trade?" I would say in my opinion trade was essential for the survival of the communities. Humans were made to live in community because that is how everyone can thrive and grow. In the comic, both communities needed to help each other in order for them to continue to survive. On a political note, countries who trade together build ties with one another. In the event that one needs assistance, the other is more readily able to be generous to the other to protect trade alliances. Currently, our country is "on a tightrope" with our alliances with some of our population believing we should just be self sufficient and be on our own. This is not the way to go. Being wired to thrive in community also applies on a more global level. Countries that trade and work together with allies are better suited for survival and growth for their own populations.
- In the comic *The Dhobi's Donkey*, the concept of property rights is discussed. The Dhobi couldn't afford to feed his donkey, so he disguised the donkey as a tiger and sent the donkey into a farmer's field. This was the Dhobi stealing millet from the farmer. When the villagers see the "tiger", they are all too afraid to do anything. Eventually, the donkey makes a braying sound and the villagers are so angry, they kill him. The result is that both the farmer and the Dhobi lost property that they needed. This illustrates the idea that both parties lose without strict property laws, sometimes people even lose their lives. People often have their own concepts of property and justice. Without an all-encompassing code to live by and consequences of breaking the code, people will take justice into their own hands. This causes violence, vigilantes, and other problematic responses.

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<sup>10</sup> For additional discussion board comments, please contact the authors.

Ergo, stricter property laws with clear punishments can bring down violence in societies. It can also reduce the number of vigilantes. This helps to create a better functioning, more peaceful place for people to live and thrive.

- In the fable of the Mother, we see two sons who love and want power. While one son already holds a higher title of King, the younger brother does not. He makes the decision to cheat the system, put himself in the lead of the race, and won the kingship. Both of these sons were not satisfied with their lives or what they had and were willing to do whatever it took to get more. They were greedy. While this story ends with the mother separating them, often situations like this end up very nasty.

Holding a position of power comes with a lot of temptation. It is easy to start telling little lies, being deceitful, becoming prideful, and especially misusing authority. As this story does show, the kingdoms later combined their towns and the prodigal son eventually came home. While these stories ended well, had they not given in to the temptation of power, they could have been more successful.

If we use this society as an example, we can ultimately see (by the flaws of their legal system) that having good property rights is essential to a well functioning economic system, as well as a less violent society as a whole. With a functioning legal system, private ownership, particularly property in this instance, is protected against invasion and infringement upon another's property. This private ownership gives the owner exclusive use to their property as long as they are not invading/infringing upon someone else's (as stated above). While this society did not have a legal system in which the actions of both parties could have been effectively handled, the initial action by the Dhobi could have been avoided upon the understanding and implementation of the legal system and well defined property rights.

- The Dullard accounts of three scholars and a "dullard," who set out for a nearby city to make use of their knowledge. Along the way, they discover the bare remains of a lion, and decide to use their know-how to bring the beast to life. They succeed in doing just that, and are promptly eaten by the lion. Only the "dullard," who was not a scholar, had the common sense to foresee the outcome of their actions and escape their fate. The Fable shows how though higher education allows individuals to perform miraculous things through their intellectual capabilities, that alone is of no use if they are poured into the wrong efforts. Rather, it is leadership and common sense that directs these capabilities into rational outlets. Measurable success in academics does not always equate to immeasurable success in life.

The founders of Apple, Microsoft, Whole Foods, Uber, Facebook and Twitter all dropped out of college early (an act that may seem unfavorable in statistics), but all were equipped with the *right* amount of human capital, as well as business sense and common sense necessary to become entrepreneurs, and found their future multimillion companies.

In fact, it is stunningly rare for valedictorians and salutatorians to go on to change the world as these entrepreneurs after graduating, as a research by Boston College discovered. They attain these high honors within academia because they learn to work with, live with, and succeed within a fixed system. They learn how to stay within the lines, and churn out work that is deemed commendable by academic superiors.

However, outside the academic world, an entrepreneur succeeds through thinking outside the box and challenging the existing system (with a fair amount of common sense of course). A high human capital of college and high education is not always the driving



mechanism behind the earth-moving entrepreneurship that found enterprises that benefit the community such as Apple and Microsoft. It is the right amount of human know-how rather than the amount.

### Compared to Other Classes

At Regent University, the Economics 101 class is delivered in all three methodologies; traditional, hybrid and online. These are not always offered simultaneously; most offerings are exclusively online classes making cross-class comparisons less robust. We will expand the use of these comics to more classes and have already started the process by introducing the comics to the 15-week traditional version of the Econ 101 class. However, the class was offered as an 8-week hybrid in the 2017 Spring semester, before we introduced the comics to the curriculum. Table 3 below shows the comparison between the two classes. Our priors were that the 2019 class would be marginally better.

**Table 3:** Grade comparison between a hybrid class taught in 2019 vs. 2017

Measure	2019 Class with Comics	2017 Class without Comics
Mean Final Grade of Class	81.7	77.9
Median Final grade	85.5	81.0
Percent earning A's	24%	20%
Percent earning B's	50%	36%
Percent earning C's	17%	27%
Percent earning less than C	9%	17%

These courses were identical except where the comic book material replaced other discussion questions or essay assignments, and the comic class performed marginally better, but these results were not statistically significant and are merely suggestive. Further, the introduction of a significant cross-cultural element added an interesting and different way to look at some of the economic issues without harming student performance. We are cautiously optimistic that with more experience we will see more robust results.

In addition to these results, we had compared the overall student satisfaction scores of the two classes. The treatment class scored a 4.3 on a 5.0 scale while the untreated class scored a 4.15. Again, this is not statistically significant but is consistent with the results in Table 3 in suggesting that the comics have a positive effect on student learning. While this data is strongly suggestive that the comics had a positive impact on learning, as of now we do not want to make conclusions we cannot fully support from the data. Once we introduce the comics to more classes and have more experience, we expect to have additional results.

### Qualitative results

As is always the case the numerical evaluations only tell part of the story, the qualitative open-ended feedback is what vital to completing the picture. Below are selected comments from the surveys, and while the vast majority were positive, we present a balanced mix of both here.<sup>11</sup> The question we asked on the survey was “Is there anything you would like to add or share about your experiences using the comics for teaching economics lessons?”

<sup>11</sup> Please contact the authors for additional comments from students.

*Positive Feedback*

- The comics helped me have better understanding on what to write about. Also, I found them fun to read.
- They were all entertaining and interesting ... They brought a perspective to what was learned in class, and by having dialogue, I was able to see them even more differently. I think the curriculum is enhanced with their addition.
- The comics gave the class more dimension, than just having to read a text. The comics were entertaining to read.
- I thought it was an awesome way to learn.
- By reading the comics I was able to understand the topics covered in the textbook more and it was easier to write about the topics in the textbook.
- The comics breaks down the subject in simpler everyday terms which gives a clearer understanding to the course. I love it.
- I loved the comics! I thought they were a great break from just reading text.

*Negative Feedback*

- I wish the comics had a little more detail and were more (clear) thorough with the principles and character traits being emphasized.
- There were times where I truly struggled to apply the course work to the comic. You were pushing for creativity, but that didn't come easily. The mother and the Dullard were hard for me, but again creativity was needed.
- I really loved the comics themselves, but it was kind of hard to see economics in them. Most of the comics, excluding Andhr Nagar, had no obvious economic qualities. But I looked forward to reading them nonetheless.
- It was a fun and interesting conclusion, but the comics themselves were only barely connected to the issues at hand. It was fun dissecting them in relation to economics, but in a fantasy world it also felt a little ordinary.
- Some of the comics- specifically the Nagari Fable + The Mother were difficult for me to elaborate/clearly see the economic lesson. Although each comic caused me to really search for the lesson, some were more difficult to find economic relation to the specific week's reading.

**Conclusion**

The first thing to note is that the students liked the comics themselves. Even the negative comments expressed appreciation for and enjoyment from having the comics as part of the class. There was entertainment value, and while not our primary goal, it was a goal, and we were not sure if we would achieve it. This is like our goal of introducing a cross-cultural element to the class, as approximately 90 percent of the class said they did appreciate that aspect of the comics.

The second outcome to note is that cross-cultural tools like comics can be introduced to classes without strong negative effects on student's understanding of economics. Self-reported responses on the survey, indicated that for roughly 70 percent of students that the comics helped learning and retention.

The third outcome is that while we see the results overall as positive and supportive of further use and research, we do see some areas we need to improve, primarily in making the connection between the comics and the material clearer and more obvious to the student. The students liked comics themselves but enough struggled to see the connections to the concepts and

material that we need to address that. We did not directly ask if the comics hindered learning and no one indicated that in the open-ended question, but we do need to make sure we have done all we can to establish the connections.

These results open several opportunities for us and others. One, of course, is to improve what we are doing and continue to track and confirm the results we have found in this paper via regression analysis or randomization of students who take a comics-based course vs. non comics course. Second is to use ACK comics beyond Regent University. The conclusions derived from a private Christian University might be different than a state university or a liberal arts college. The third would be to apply this to other classes. We plan to introduce the ACK comics in several other classes over the next several years including economic development, principles classes, political economy, and others. We will also explore ways to use the comics on a sub-set of students within each class to create true treatment and control groups and hopefully derive some statistically robust results. While we have our plans, we do not pretend to know what creative uses other professors might find for these comics. The fourth possibility is to pull comics from a broader spectrum, incorporating African, Latin American, Asian, and others to create a truly cross-cultural experience for the student while also demonstrating the universality of economic concepts.

Students learn in many ways. Traditional texts and lectures are not the best way to reach the broad spectrum of students today, if they ever were. The professor has many tools available and can and should use all of them to reach every student. We see using comics as one tool in a growing toolbox which preliminary results show to be effective and appreciated. Further, the ACK comics helps in diversifying and internationalizing the curriculum in a low-cost manner which provides further benefits to students to expand their education.

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